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ABSTRACT

This series of interdisciplinary activities, some of which are done outside the classroom, promotes awareness of the relationship between nature and man. The booklet contains student worksheets, resource lists, a bibliography, and units on ecology and tree conservation. Lessons, which are short and varied, cover topics such as awareness, pollution, conservation recycling, and balance. Most of the lessons follow the same format: objective, materials, introduction, activity, discussion, and follow-up activity. The materials are designed for primary school students. (Author/RH)

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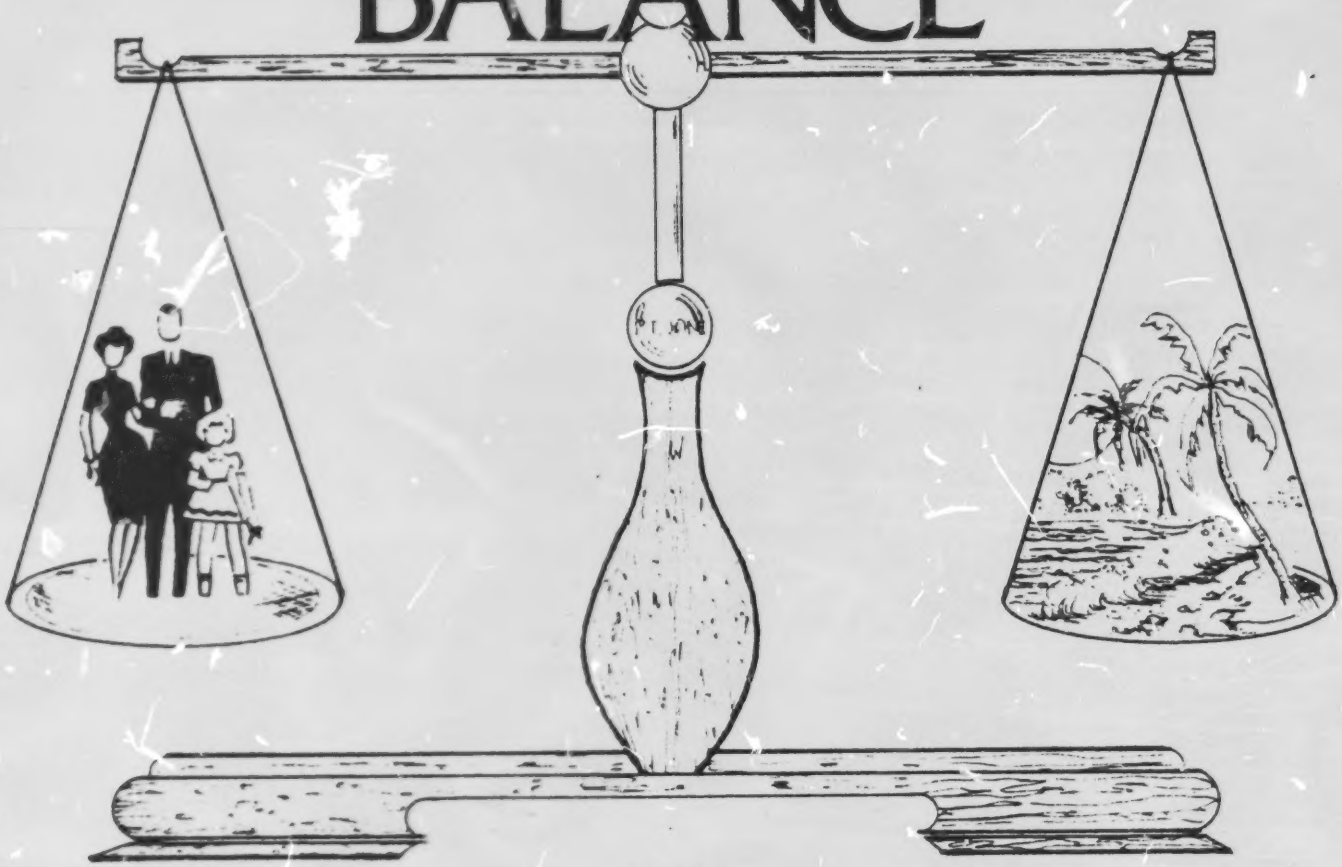
Man and Mother Nature

A BALANCE



COMPILED BY JUDY KEITH RED BUG ELEMENTARY SCHOOL GRADE 1

SCAV

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MAN AND MOTHER NATURE: A BALANCE

In our evergrowing technological society, children need to be exposed and made aware of the problems surrounding them. This awareness of the relationship between nature and themselves will better equip them to effectively deal with their environment and how it affects their future.

"Beauty is nature in its purest form - let it grow and blossom for our children."

CONCEPTS:

A. Awareness - Children need to be awakened to the world around them and the ways in which man alters the environment.

WAYS - Activities utilizing the five senses and exercises in problem solving.

B. Elements of Pollution: Air, Land, Water, Noise

WAYS - Activities dealing with awareness of and living with pollution through problem solving.

C. Conservation - As a means of protecting our natural resources.

WAYS - Activities for projects and experiments.

D. Recycling - As a means of helping our natural resources and environment.

WAYS - Activities for problem solving and projects.

E. Balance - Interdependence of all living things.

WAYS - Activities for values, behavioral attitudes and problem solving.

INTERDISCIPLINARY CROSS REFERENCE

A. Reading/Language Arts

Awareness -	The Ground Inside, Outside Living Vs. Non-Living My Tiny World Hula-Hoop Toss My Tree
Pollution -	What is Pollution? Signs of Man The House That Jack Built Your Home in the Environment Space Visitors to Our Community Space Walk Dirty Air Water Pollution Where Does The Wind Blow? Dirty Water Environmenta Experiments Litter, Litter Everywhere
Conservation -	Conservation Scrapbook
Recycling -	Organic Garbage
Balance -	The Value of Nature Cinquain Interacting We Need Trees The Giving Tree

B. Math

Pollution -	Dirty Air - Measurement Litter, Litter Everywhere - $ Environmental Experiments - Measurement Noise Pollution - Measurement
Recycling -	Making Paper - Measurement

C. Social Studies/Values

All Interdependence and Value Lessons

D. Science

All Lessons

E. Art

Environmental Art Section and Many Follow Ups

AWARENESS

AWARENESS

Before a study of Man and Mother Nature, the child needs to become aware of his/her environment. Synetics is a technique created by William J. Gorden designed to foster awareness by making the strange familiar and the familiar strange. This involvement and detachment occurs through four basic types of analogy.

1. Personal -- the child identifies with an object or process
2. Direct -- comparing parallel facts in different disciplines
3. Symbolic -- using an image as a way of looking at things
4. Fantasy -- anything is valid as long as it is imagined

This specific technique for developing awareness can be used throughout this study of our environment. Many lessons and activities lend themselves well to this. It also offers a good way to culminate lessons.

WAYS ... to develop awareness

1. Take a walk around the school site, neighborhood or park. Draw a picture about and discuss the different things seen.

2. Sketch five buildings in the community that show the changes in style and materials over the years. Discuss.

3. Look around and describe your surroundings. Report your data verbally or through some art form.

4. Movies ..... The Treehouse
   Down Decibel
   Standing Room Only
   The Garbage Explosion
   The Drowning Boy

5. Collect materials from outside and create some form of art from the found treasures. Each piece of art can show:

   ..... how ugly your environment is
   ..... how beautiful your environment is
   ..... how it makes you feel
   ..... the joy of your environment
   ..... the sadness of your environment
   ..... how time changes your environment

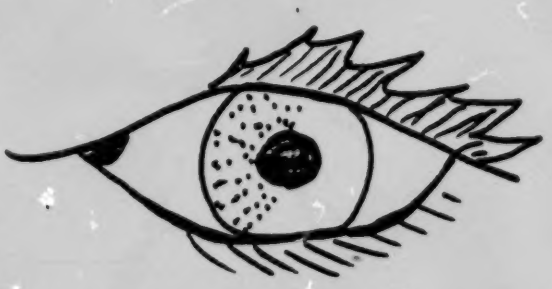
6. Use a language experience chart to describe a nature walk, a picture, a movie, etc.

7. Take a nature walk using the five senses. Discuss.

8. On a nature walk make a recording of various sounds. Discuss the tape and associate sounds with the sources.

9. Have the children bring in magazines, pictures, etc., pertaining to nature and make a nature book. Discuss the types of things found.

10. When the children enter the room have them draw a picture of what the sky looked like outside. Then go outside and take a look. What are the differences between the sky and the pictures? Discuss the reasons.



11. What environmental object, event, process, or simply word identification comes to mind with the following words:

villian	trust	dirty	hungry
hard	happy	rotten	thirsty
peaceful	polluted	clean	quiet
producing	wasted	love	stillness

Discuss.

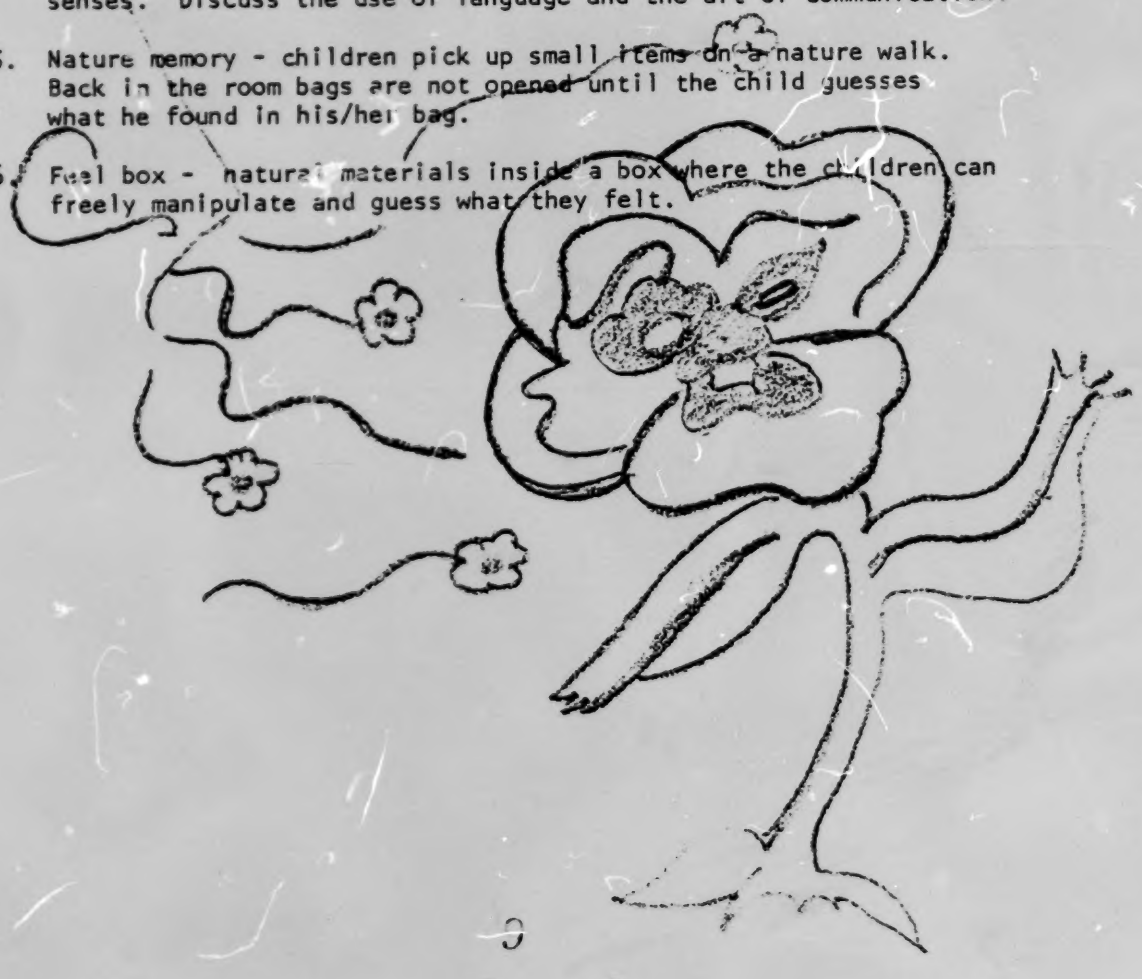
12. Gather leaves and gently rub the leaf with the thumb and the forefinger to release the fragrance. Discuss the likes and dislikes.

13. Rub onions on different objects inside and outside making an odor trail. Have small groups of children follow the trails. Discuss how animals use odors to locate their food.

14. Trust walks - each group blindfolds one person, group leads that person around outside. Blind person solely relys on his/her senses. Discuss the use of language and the art of communication.

15. Nature memory - children pick up small items on a nature walk. Back in the room bags are not opened until the child guesses what he found in his/her bag.

16. Feel box - natural materials inside a box where the children can freely manipulate and guess what they felt.



THE GROUND

OBJECTIVE

The child will be able to express his/her likes and dislikes pertaining to their environment. The child will become more aware of his/her natural environment due to manipulation and discussion.

MATERIALS

Outdoors.

LESSON

Introduction

Take a walk looking at the different types of soil. Compare the likenesses and differences in them. Let the child trace around with his/her foot and focus on that small area.

Activity

Compare the ground in three different places, near the water, the trails, and an open spot.

Discussion

What are the different colors of the different soils? Do you see any leaves? What does the soil feel like?

...A Little Bit More

Plant a garden in different types of soil and note any differences in the plants grown.

INSIDE, OUTSIDE, UPSIDE DOWN

OBJECTIVE

After the exercise, the child will be able to discuss various ways of looking at things, and the different interpretations of our environment.

MATERIALS

Books and outdoors.

LESSON

Introduction

This activity takes place in a different land - inside, outside, upside down land. Different ways to look at things: close up, far away, through fingers, between legs, change what you are looking at by folding, crumbling, etc.

Activity

Read the book by Jan Berenstein - Inside, Outside, Upside Down.

Discussion

How did things seem to change when you changed the way you looked at them? Why do things look so different when you change the way you look at them? Imagine what it would be like if you walked on your hands? How would you change? Eat? Play? What things couldn't you do? How do animals see their surroundings? Are there other ways to see things?

...A Little Bit More

Read the Blind Men and the Elephant, Lillian Quigley.

LIVING VS. NON-LIVING

OBJECTIVE

After the lesson, the child will be able to identify those objects which are living from those which are not.

MATERIALS

Bag for materials, glue and paper.

LESSON

Introduction

Children go for a nature walk and collect five non-living things.

Activity

Group in various ways: size, color, texture and shape. Make a chart organizing the materials.

Discussion

Pertaining to living things and non-living things. Are there any differences that are hard to find?

....A Little Bit More

Make a collage using the found materials.

MY TINY WORLD

OBJECTIVE

Children will be able to recall and discuss those things found in their immediate environment; which is their "tiny world".

MATERIALS

Manila paper, crayons, chart paper and sitting carpets.

LESSON

Introduction

Gather children together and find a nice quiet place outside (as free from distraction as possible). Each child will pick their own tiny world to discover.

Activity

Children freely explore their tiny worlds. On the manila paper, children draw four things they saw in their world.

Discussion

Talk about all the interesting things discovered in all the tiny worlds.

....A Little Bit More

Lead a discussion comparing and contrasting the real world with the tiny worlds.

HULA-HOOP TOSS

OBJECTIVE

Given materials, the child will be able to identify those objects which are living from those which are not. The child will be able to group the found materials in three different groups.

MATERIALS

Hula-hoop and toss cards.

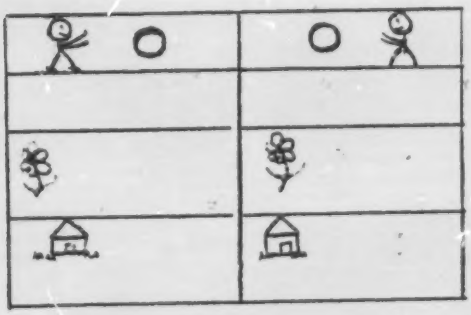
LESSON

Introduction

Go outside with eyes closed and toss a hoop. Look carefully at the things inside the hoop. Group the different things in as many groups as possible.

Activity

Fill in the following chart.



HOOP TOSS CARD	
1st Throw	2nd Throw
living things:	living:
non-living:	non-living:

Discussion

What kind of things did you find in your hoop? How do you feel about the things you found? Can you use any of these things? How? Do you see anything in your hoop you would change? How?

....A Little Bit More

Throw the hoops at different times of the day and record all the things found. Compare your chart with others. Are they the same? Why?

MY TREE

OBJECTIVE

The child will be able to recognize and appreciate different types of trees found in his/her environment.

MATERIALS

Record book and pictures of different types of trees.

LESSON

Introduction

Read the poem My Tree by the Scholastic Earth Corp.

MY TREE

This is my tree
My place to be done.
My branches for climbing.
My green leaves for hiding in.
My sunshine for reading.
My clouds for dreaming.
My shy sky for singing.
My, my tree, my beautiful tree.

Activities

1. Present a visual presentation of different types of trees.
2. Find a tree you see every day. Get to know your tree and keep a record book.
3. Look closely at your tree and draw its shape.
4. Find out how old your tree is.

Discussion

Brainstrom different ways to protect trees.

...A Little Bit More

Make a bark or leaf rubbing, make a leaf print. Write a poem about your tree.

HELP FOR THE BIRDS

OBJECTIVE

The child will help birds make nests and become more aware of animal needs.

MATERIALS

String, feathers, yarn and scrap materials.

LESSON

Introduction

Place bits of string, small sticks, feathers from pillows, peices of yarn and cloth on a platform.

Activity

Children observe and record materials used most least.

Discussion

What items were used most? Why? Did similar birds take similar items?

"What would happen if birds could not find these items naturally in the environment?"

- POLLUTION
- WATER
- AIR
- LAND
- NOISE

WAYS TO BRING POLLUTION INTO FOCUS

1. GLITTER ROOM -- Children brainstrom ways of helping keep the classroom free from pollution; chart and keep in view for all to see.

2. ENVIRONMENTAL VILLIAN POSTERS -- Children draw the environmental villian of their choice to be displayed.

3. PICTURE TAKING -- Children take various pictures of their environment.

4. MOVIE STRIPS -- What man is doing to the earth.

5. VIDEO TAPE -- A short presentation is shown to the entire school on the subject of environmental concern. Children are directly and totally in control of producing and presenting show.

6. C.C.C. -- Organize a Campus Clean-Up Corps; a pollution court could establish and judge offenders.

7. IMPROVISATIONAL -- Pretend you are a fish living in a polluted lake, how would you eat? Act out as other children guess. Example: Bird without trees; worm without soil; plant without water; etc.

WHAT IS POLLUTION?

OBJECTIVE

The child will be able to catagorize pollution from non-pollution.

MATERIALS

Manila paper, crayons and drawing tools.

LESSON

Introduction

Pictures of pollution and non-pollution are displayed one at a time. Each picture discussed grouped in different ways as the children view them. Questioning techniques utilized as pictures are compared and contrasted.

Activity

Children draw a picture about what pollution means to them.

Discussion

What is pollution? How can you tell something is polluted?

....A Little Bit More

Children armed with camera take their own pictures of pollution and non-pollution to be presented.

SIGNS OF MAN

OBJECTIVE

The child will be able to find at least three signs of man in his/her environment and list.

MATERIALS

Chart and pencil.

LESSON

Introduction

Have you ever been hunting? Well today we are going on a hunt for signs of man... that strange creature that changes his surroundings. He isn't very careful about covering his trail, so-o-o it should be easy.

Activity

Find three in each area.

MESSY LITTER	ACTS OF CONSTRUCTION	NOISE

Discussion

Could someone follow your trail home? Which category would help them? Does man help the environment or hurt where he goes? How? What are some ways you can think of for man to help more?

....A Little Bit More

Take chart to various parts of the community and fill in. Discuss.

THE HOUSE THAT JACK BUILT

OBJECTIVE

After the lesson, the child will be able to recognize different types of pesticides and the harm they do.

MATERIALS

Ingredients for making natural pesticides.

LESSON

Introduction

Read "The House That Jack Built". (Attached).

Activity

Make a garlic spray, test it. Set up an area to test and control. Keep records of both.

Discussion

What is making everyone ill? What pesticides are used in your house? Make a list and compare around the class. Try using organic pesticides to help the situation.

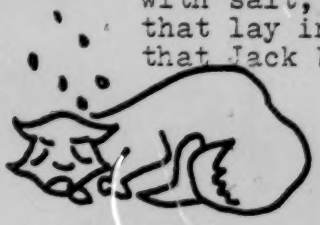
THE HOUSE THAT JACK BUILT

This is the house
that Jack built.

This is the spray
with the poisened salt,
that lay in the house
that Jack built.

This is the malt
that was sprayed with
the salt,
that lay in the house
that Jack built.

This is the rat
that ate the malt,
that was sprayed
with salt,
that lay in the house
that Jack built.



This is the cat,
that killed the rat,
that ate the malt,
that was sprayed
with the salt,
that lay in the house that Jack built.

This is the cow
with the crumpled horn,
who ate some malt and
some poisened corn,
that tossed the dog,
that helped the cat,
that killed the rat,
that ate the malt,
that was sprayed
with the salt,
that lay in the house
that Jack built.

This is the maiden all forlorn,
that milked the cow with the crumpled horn,
who ate some malt,
and some poisened corn,
that tossed the dog,
that helped the cat,
that killed the rat,
that ate the malt,
that was sprayed
with the salt,
that lay in the house
that Jack built.

This is the man all
tattered and torn,
that shared with the
maiden all forlorn,
that milked the cow
with the crumpled horn,
who ate some malt
and some poisened corn
that tossed the dog,
that helped the cat,
that killed the rat,
that ate the malt,
that was sprayed
with the salt,
that lay in the house
that Jack built.

This is the farm full of poisened salt.
That should be a sign for us all to halt
this spraying of grain with a poisen aim.
That is killing of pests and all the rest.
That spraying of he and the spraying of she
is really the killing of you and me.
That's all --- for the house that Jack built.

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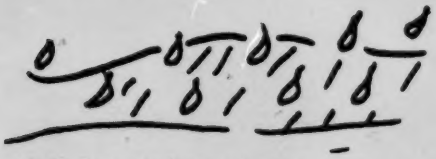
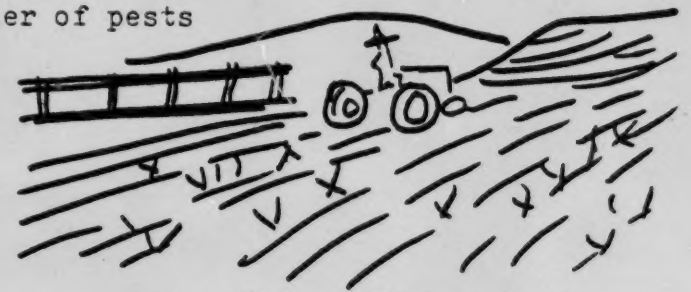
THE "CIDE" LIST

-Cide is part of a word which means killer of.

Insecticide - killer of insects
Fungicide - killer of molds and fungi
Herbicide - killer of herbs and weeds
Rodenticide - killer of rodents
Pesticide - killer of pests

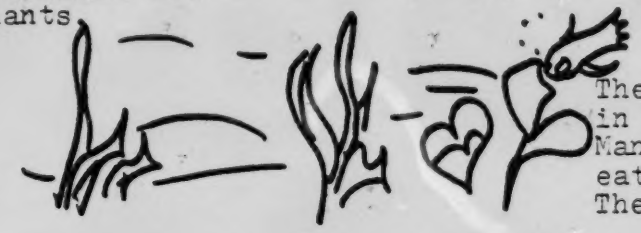
Pesticides kill pests. They also kill other animals. It works like this:
A pesticide is sprayed over a field.





Rain washes some of the pesticide into the water.

It is taken into small plants in ponds and streams. Small animals eat the plants.



The pesticide stays in their bodies. Many small fish are eaten by larger fish. The pesticide is passed on.

NATURAL CONTROLS

ANT, COCKROACH -- Mix equal parts of icing sugar and powered borax. Sprinkle in corners and along baseboards.

APHIDS -- Same as for mealy bugs and trips. Cut up three pounds of rhubarb leaves or elder leaves. Boil 1/2 hour in 3 quarts of water. Strain. Cool. Dissolve 1 ounce soapflakes in quart of water. Mix the two and spray.

BEETLE, BUG, CATERPILLAR -- Pick pests off and put them in a can of kerosene or oil.

CABBAGE LOOPER, CARROT FLY -- Plant one of these herbs between rows of cabbage or carrots: sage, rosemary, mint, leeks, hyssop.

CABBAGE WORM -- Plant rosemary or thyme in garden. Yellow jackets are a natural enemy. Sprinkle rye flour over and around plants when covered with dew.

CARROT FLY -- Plant onion sets (not seeds) between rows of carrots.

COTTEN BOLLWORM, TOBACCO BUDWORM -- Infest with ladybugs.

FLEA BEETLE -- Plant catnip here and there in border.

JAPANESE BEETLE -- Plant garlic, rue, or tansy near roses and raspberries.

LICE, MITES ON HOUSE PLANTS -- Spray plants with plain soapy water.
MEALY BUGS, THRIPS, MITES
RED SPIDER

MILLIPEDE, WIREWORM -- Punch holes in sides and bottom of tall juice can. Bury upright in garden border. Fill with potatoe or carrot peelings. Empty weekly.

MOLE -- Plant herb called "mole plant" here and there in flower garden.

MOSQUITO -- Dry up stagnant water to kill larvae. Put up a purple martin birdhouse in your yard.

MOTHS AROUND LIGHTS -- Use frosted coated yellow or red outdoor light bulbs.

ONION FLY --Plant onion sets; not seeds.

POTATO BUG -- Plant horseradish, dead nettle, or flax in potato patch.

SLUG, SNAIL, CUTWORM -- Place a cabbage leaf upside down on ground, they will gather underneath. Place a wide shallow pan of stale beer, sunk level with the ground. Clean out weekly.

SOWBUG, EARWIG -- Remove any piles of decaying garden trash or refuse.

TOMATO WORM -- Plant asparagus or borage near tomatoes.

Try to avoid any of these chemicals. They all have a very long life and they do not dissolve fast. They can remain in the soil as a deadly poison for years and years.

INSECTICIDES -- DDT, aldrine, dieldrin, chlordane, lindane, heptachlor, endrin, taxaphene, are resin strips (dichtorvos)

HERBICIDES -- 2-4-D, 2-4-5-T or any compound containing lead, mercury, or arsenic

FUNGICIDES -- dinitro cresol, captan and folpet

RODENTICIDES -- antu

Adapted from:
Ranger Rick's Nature Magazine
National Wildlife Federation
1412 16th Street, N. W.
Washington, D. C. 20036

YOUR HOME IN THE ENVIRONMENT

OBJECTIVE

Given materials, the child will be able to construct a scale house and place an appropriate environment around it.

MATERIALS

House ditto, crayons and scissors.

LESSON

Introduction

Think carefully about your house and all the things around it. Try to remember as much as you can.

Activities

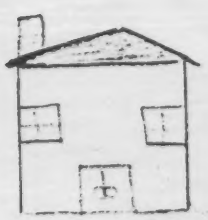
1. Make a model house with given ditto.
2. Add all the things inside and outside that effect it.

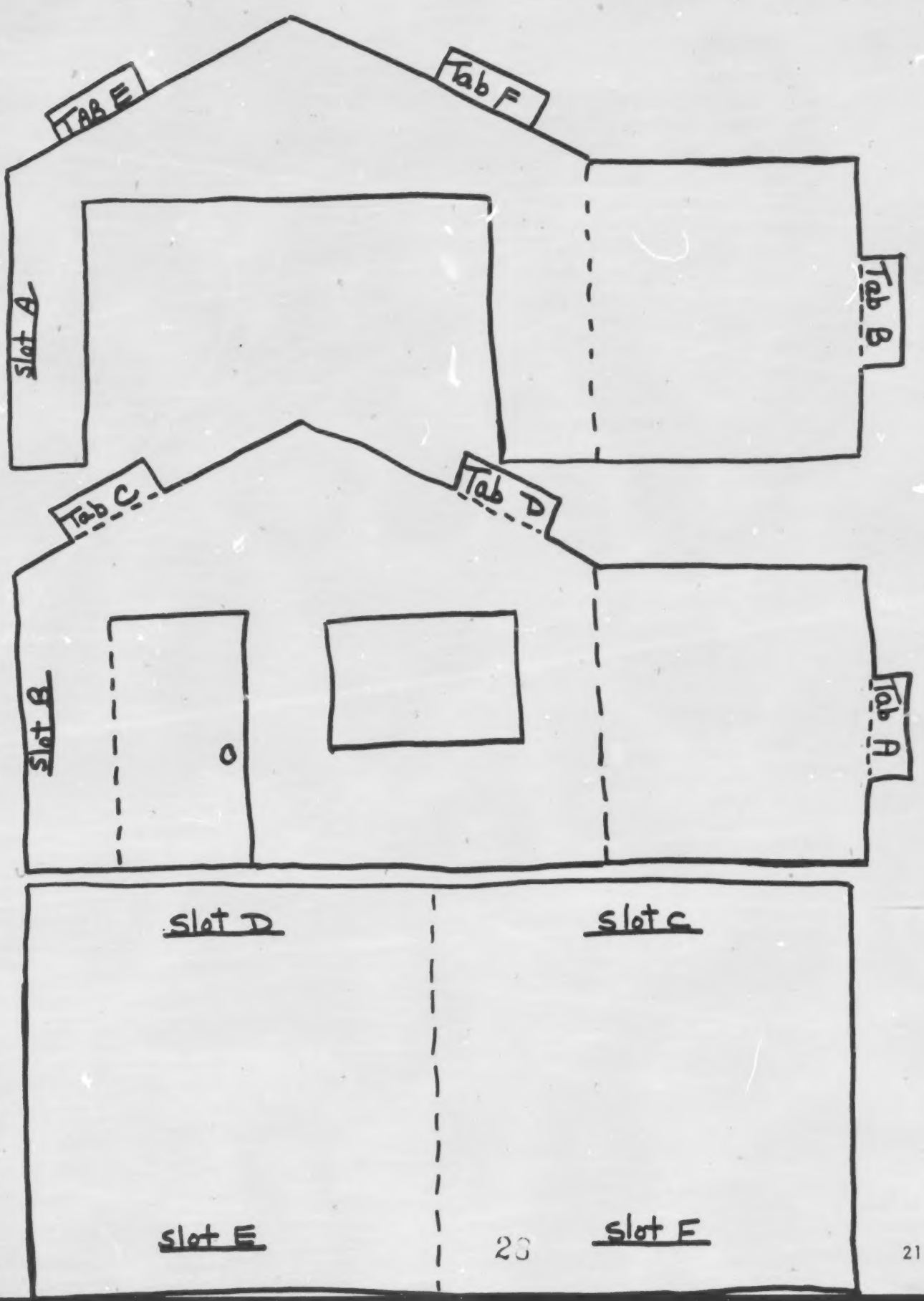
Discussion

How does the environment affect your house? How does your house affect the environment? Do all people live in houses? Discuss different homes affecting the environment?

....A Little Bit More

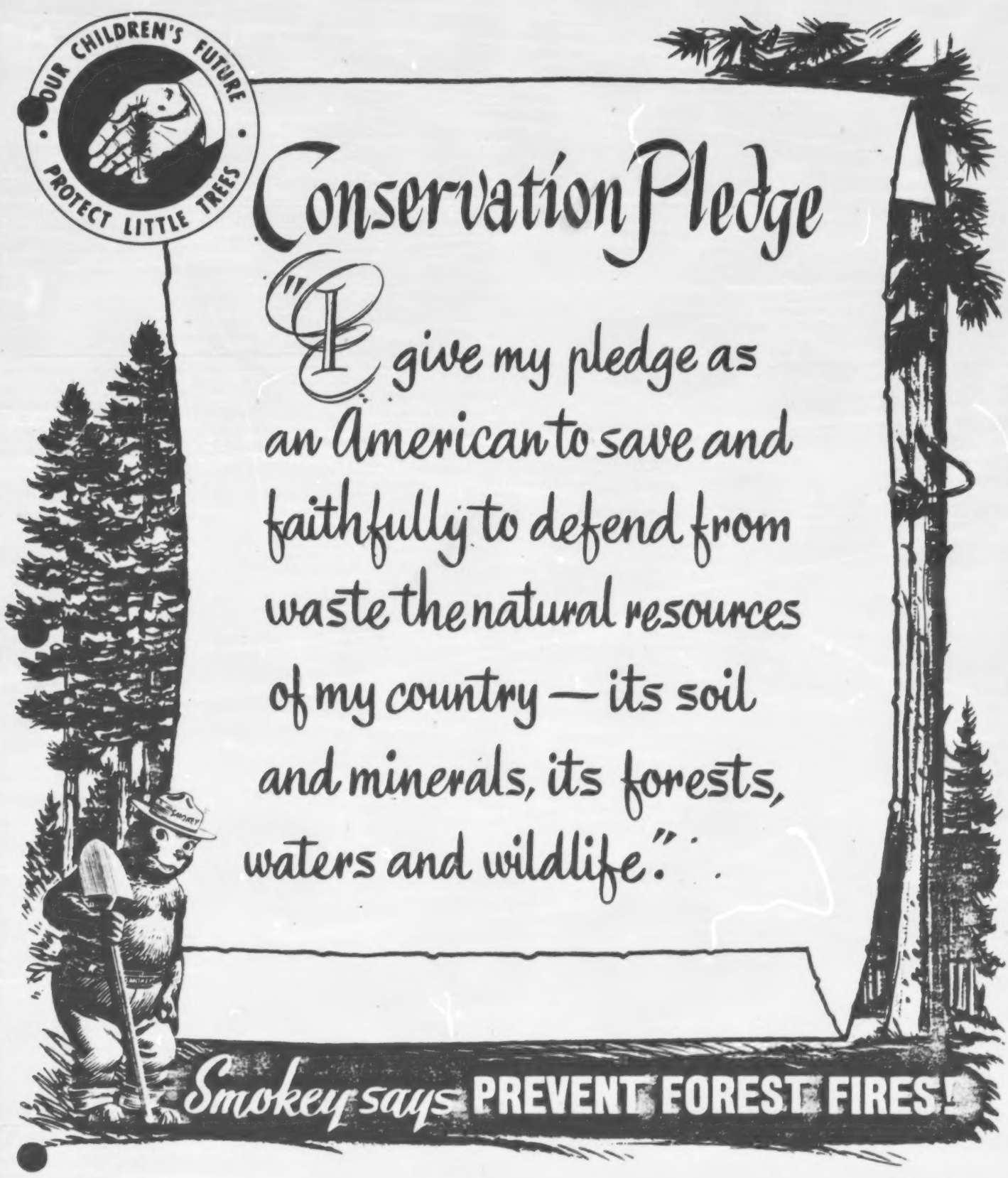
Chart the things used inside and outside that affect the environment.





Conservation Pledge

"I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country — its soil and minerals, its forests, waters and wildlife."



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SPACE VISITORS TO OUR COMMUNITY/CITY

OBJECTIVE

The child will be able to write a creative short story relating the character and events of pollution articles found.

MATERIALS

Litter, paper, pencil and crayons.

LESSON

Introduction

Instruct each child to find any three pieces of litter that interests them. The samples should be found around a city block or around the school grounds. Have the children spread all the pieces before them on a table to examine.

Activities

1. Explain that each child is a space scientist who has landed on a strange planet. The planet is in one of its long night periods so it is impossible to see any distance. Your robots have scanned the surface and have returned with three samples which you have before you. A short story is written or recorded pertaining to the creatures found on this planet and their habits.
2. Have the stories presented to the class orally or in skit form.

Discussion

Compare and contrast the different space creatures and their habits.

....A Little Bit More

Illustrate and make into a class book for others to enjoy.

SPACE WALK

OBJECTIVE

The child will be able to role play designated characters related to a polluted environment.

MATERIALS

Props and costumes.

LESSON

Introduction

With all the pollution in the world, be an ant and take a walk. Take a walk on 30 foot stilts, be a 100 foot giant.

Activity

Act out.

Discussion

How did you feel? Brainstorm all the various emotions felt.

....A Little Bit More

Write a story or poem, illustrate and make into a class book.

DIRTY AIR

OBJECTIVE

After the exercise, the child will be able to list and rank those cars which emit pollutants from least to most.

MATERIALS

Cardboard, vaseline and cars.

LESSON

Introduction

Take a walk in a clean airy park, pack a lunch and enjoy. After lunch take another walk, this time walk down a city block congested with cars. Note the difference in air.

Activity

Children working in pairs make several vaseline coated cardboard squares. Child holds card at a safe distance for a period of five to ten seconds to collect exhaust emissions. All samples are held at a uniform distance. The cardboard pieces are labeled with make and model and year of car. Children organize cards according to some agreed upon plan.

Discussion

What can be done? Do you think that car dealers should let the general public know findings such as these? Why or why not?

....A Little Bit More

Notify persons in community regarding data found.

WATER POLLUTION

OBJECTIVE

Given materials, the child will be able to construct a water cycle wheel to better comprehend the need for protecting our water from pollution.

MATERIALS

Wheels and metal brads.

LESSON

Introduction

Take a walk to a nearby lake.

Activity

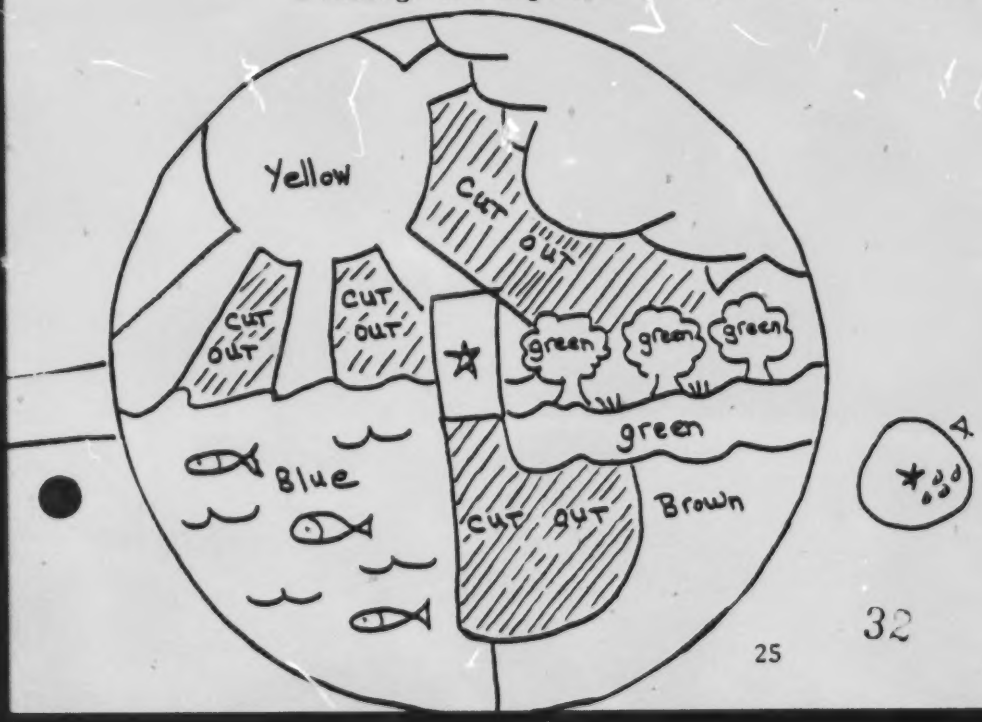
Construct water cycle wheel shown below.

Discussion

Discuss the water cycle - Mother Nature's way to clean water

....A Little Bit More

List ways each child uses water at home; compare and discuss. Make a collage showing ways in which man uses water.



1. Color areas
2. Cut out circle including handle
3. Cut out designated areas
4. Cut out another circle the same size
5. Attach with brad at *

WHERE DOES THE WIND BLOW?

WATER

OBJECTIVE

The child will be able to catagorize those elements which pollute water and list ways to stop such actions.

MATERIALS

Paper and pencil.

LESSON

Introduction

Children taken outside to freely observe wind movements and clouds moving and changing.

Activity

Children draw pictures of pollutants that could be blown into the water to cause pollution.

Discussion

Discuss various ways to block pollutants from entering bodies of water. (Children elicit through teacher guided questioning).

....A Little Bit More

Have a free open discussion outside concerning the images of clouds. Pictures of these images made and displayed.

DIRTY WATER

WATER

OBJECTIVE

Given materials, the child will be able to designate five ways natural materials pollute water. The child will be able to properly manipulate the microscope, pollutants, and chart all findings.

MATERIALS

Microscope, pollutants, chart paper, pencil and baby food jars.

LESSON

Introduction

Children elicit various ways water is polluted. Answers are charted.

Take a walk to a lake or pond that is polluted.

Activity

Each child with a baby food jar makes his/her own polluted water.

Specimens are viewed under the microscope.

Discussion

Brainstorm different ways to slow down water pollution.

....A Little Bit More

Each child finds one way he/she can aid water pollution and start immediately.

ENVIRONMENTAL EXPERIMENTS

AIR/WATER

OBJECTIVE

1. Given materials, the child will be able to perform the steps in setting up experiments dealing with pollution and accurately present data resulting from experiment.
2. After the lesson, the child will be able to list elements which pollute air and water.

MATERIALS

Cardboard, vaseline, tin pans, water and microscope.

LESSON

Introduction

The steps of experiments charted and data collection introduced. (Variable ways according to age of children.)

Activity

1. Vaseline is smeared on a piece of cardboard and set outside for pollutants in the air to settle on the cardboard. Chart observations and changes due to weather.
2. Set a pan of water out for various things in the atmosphere to collect.
3. Obtain microscope for viewing the different things found on the experiments.

Discussion

Go over data collected at various times to see if any correlations exist.

....A Little Bit More

Extend experiments to different parts of the community; compare data.

CARS AND TREES

AIR

OBJECTIVE

Children will be able to correctly estimate CO^2 emissions.

MATERIALS

Cars and paper.

LESSON

Introduction

Present information that green plants are the only source of oxygen on earth. For every car that emits CO^2 into the air fifty (50) large, healthy trees are needed to restore oxygen used.

Activity

Small groups count cars in parking lot and the number of trees on grounds.

Discussion

Do the school grounds have an oxygen surplus or deficiency? How many more trees are needed to create balance?

....A Little Bit More

Study a natural map and discuss areas that would have balance considering roads and highways.

LITTER, LITTER EVERYWHERE

OBJECTIVE

The child will be able to report the cost of litter in a specified area.

MATERIALS

Paper and pencil.

LESSON

Introduction

Go over the price per piece of litter; which is 31¢. 300 pieces would be approximately $93.00.

Activity

Each child takes a specified area from a pre-made community map. Children compute the cost of one weeks worth of litter.

Discussion

Discuss the economic importance of cleaning up.

....A Little Bit More

Make an all out effort to keep the community and school grounds free from litter.

LITTER SURVEY

LAND

OBJECTIVE

1. The children will be able to distinguish those areas where trash recepticles are needed.
2. The child will be able to map school grounds and survey litter distribution.

MATERIALS

Paper, pencil and trash cans.

LESSON

Introduction

Mapping skills and techniques are presented along with record keeping procedures.

Activity

1. Designate that one day become school ground clean up day. For the following two days all trash containers are removed.
2. Children make a map and survey the areas where most litter occured. Trash cans are placed in these areas for future use.
3. A check is kept on the grounds and more trash containers are used as children see the need.

Discussion

Discuss the importance of surveying and record keeping. Contact a local surveyor to talk to the class.

...A Little Bit More

Survey various areas around community and report to appropriate offices.

LITTER IN THE COMMUNITY/CITY

OBJECTIVE -- After the lesson, the child will be able to list the various kinds of litter and relate it to specific areas.

MATERIALS -- Paper and pencil.

LESSON -- Introduction - As you walk around the city/community block you will see many different types of litter. Remember as much as you can.

Activity - By using a map you should be able to describe where you saw the most litter and what kind it was.

Disucssion - What can you tell about the people who live in the area you found the most litter?

Why is there more litter on one street than another?

What should be done about the problem?

When you mark the place on your map where you find litter see if there is any relationship between the kinds of litter and the area.

Could you determine what the people of that area do by the litter found?

.....a little bit more - Write a creative story about your walk through a ghost town.

NOISE POLLUTION

OBJECTIVE -- After the exercises, the children will be able to list various types of noise pollution and what measures can be taken to reduce. The child will be able to chart and report any changes that occur during the experiment.

MATERIALS -- Three potted plants, record player, record, paper and pencil.

LESSON -- Introduction - Outside in a relaxed atmosphere have the children listen for sounds that he/she:

1. likes or dislikes
2. loud or soft
3. morning, noon, night

Discuss relating to different emotions.

Activity - Obtain three potted plants (all the same). Place two near a sound source. For an hour a day subject plants to high volume noise; the control plant placed on a window sill. All the plants should be given the same nutritional care. Record the number of days observed, length of time observed, length of noise. Observe any changes in the plants.

Discussion - Discuss the results of the experiment. How does this correlate with human beings and other animal life? Is loud music a good idea? How can we reduce noise level in our environment? What can be done in our homes and schools?

... a little bit more - Show the movie, Noise - The New Pollutant , Bloomington, Ind. 47401

The film compares hearing ability of Americans who are subjected daily to many loud noises and the acute hearing of people living in remote regions of Africa.

CONSERVATION

SMOKEY THE BEAR

By STEVE NELSON and JACK ROLLINS

1. With a Ranger's hat and shovel and a pair of dungar-ees you will find him in the forest always sniffin' at the breeze. People
2. You can take a tip from Smokey that there's nothin' like a tree, cause they're good for kids to climb in and they're beaut-i-ful to see, you just
3. You can camp upon his doorstep and he'll make you feel at home, you can run and hunt and ramble any - where you care to roam. He will
4. If you've ever seen the forest when a fire is running wild, and you love the things within it like a moth-er loves her child, then you

stop and pay at-ten-tion when he tells 'em to be- ware, 'cause
have to look a-round you and you'll find it's not a joke, to
let you take his hon-ey and pre- tend he's not so smart, but
know why Smok-ey tells you when he sees you pass-ing through, "Re-

ev'- ry - bo-dy knows that he's the Fire Pre- ventin' Bear.
see what you'd be mis-sin' if they all went up in smoke.
don't you harm his trees for he's a Ran-ger in his heart.
member... please be care-ful... its the least that you can do."

Smokey - the Bear, Smokey - the Bear. Prowlin' and a growlin' and a

sniffin' - the air. He can find a fire - before it starts to flame. That's

why they call him Smokey, that was how he got his name.

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CONSERVATION MEANS

1. Have the children design activities which save energy and beautify the environment.
2. List ways people protect their natural resources and ways people use them carelessly.
3. Find an area near the school where water and wind has moved the soil. Develop a project showing how to keep the soil in place.
4. Chart the natural resources on a school site. Draw a map indicating natural resources. Develop a conservation plan for using and managing the area.
5. Take a walk in the rain to observe how rain strikes the soil, sidewalk, grass and trees. Observe how the soil moves with the surface of water, how rain clings to the leaves, how the leaves cushion the force of the drops, and the color of the rain as it is falling.
6. Recycle all school paper, milk cartons, and other containers. Brainstorm various ways to conserve materials at school. Chart and keep in view.
7. Shower vs. Bath - Do you use more water when bathing or showering? Take a bath and mark the water line with tape. Next time take a shower; plug the drain and see how much water you use.
8. Finish the following sentences:
   a. I can save water when I brush my teeth by _____.
   b. I can save water when I sprinkle my lawn by _____.
   c. I can save water when I wash the dishes by _____.
   d. I can save water when I get a drink by _____.
9. Children develop questions to be placed on a survey and distributed around the school. Data collected and percentages computed. All results published in an environmental newspaper.

$$\frac{\text{\# of answers yes, no, maybe}}{\text{\# answering questions}} \times 100 = \%$$

10. Develop an environmental newspaper with section for constant improvement of the school and grounds.

ENDANGERED ANIMALS

Objective - After the lessons, the children will be able to name six animals which are listed as endangered, and what can be done to protect these animals.

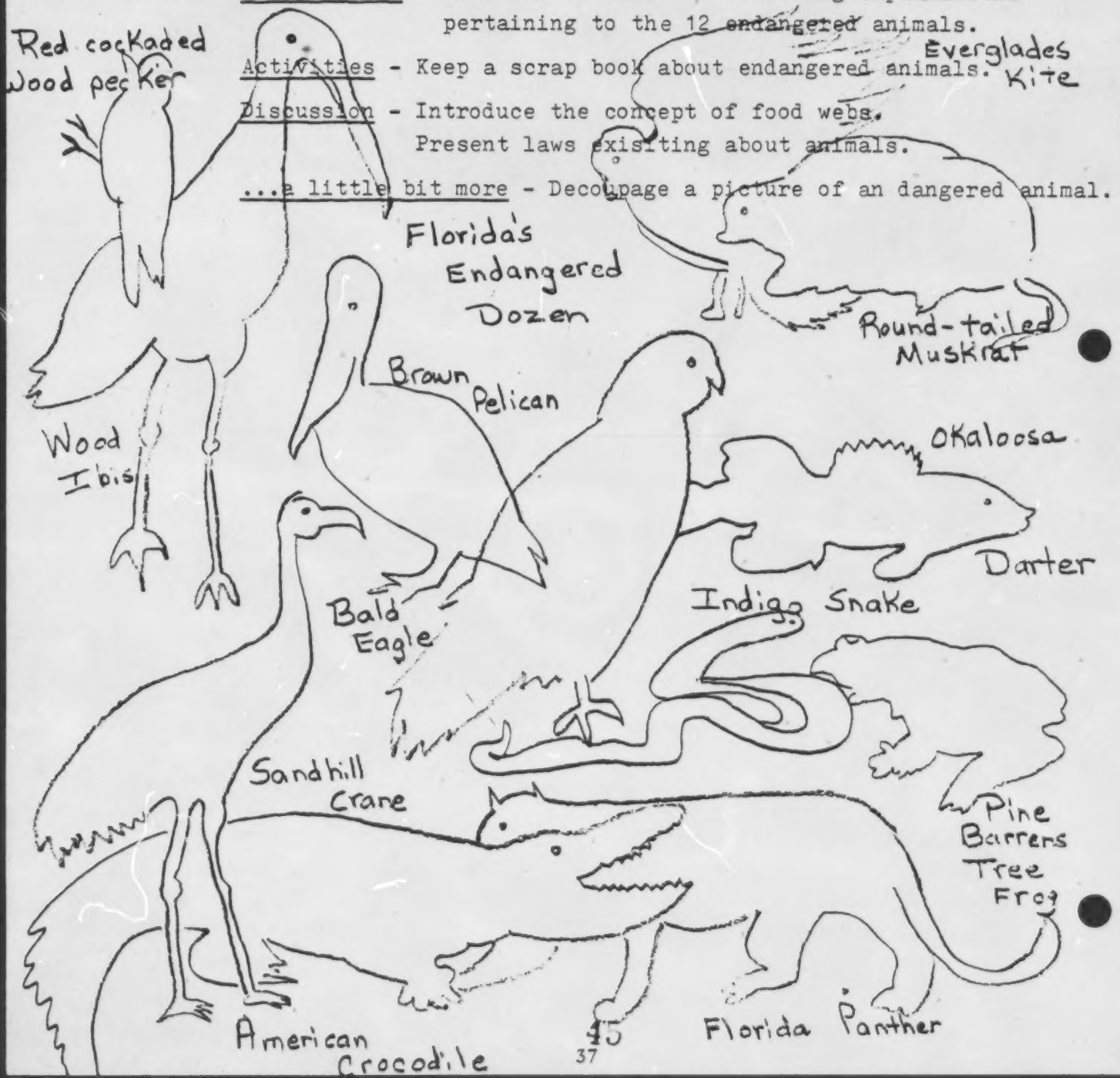
Materials - pictures of various animals studied, data on animals

Lesson - Introduction - Read and discuss the following explanations pertaining to the 12 ~~endangered~~ animals.

Activities - Keep a scrap book about endangered animals.

Discussion - Introduce the concept of food webs. Present laws existing about animals.

...a little bit more - Decoupage a picture of an dangered animal.



FLORIDA'S ENDANGERED DOZEN

WOOD IBIS

Many people call the Wood Ibis a stork. Man is taking away the storks home therefore putting this animal in danger. The Wood Ibis breeds in the cypress swamp and raises its young there. They feed on fish and live in the marshlands that man is draining for homesites. There are a few sanctuaries left but man is surrounding them with buildings and cutting the food supply. More larger sanctuaries need to be built and protected or this bird may disappear.

INDIGO SNAKE

The Indigo snake is not dangerous and can be easily tamed. It is usually five to six feet long, shiny blue-black, and its chin and head may be orange. The friendly snake eats rabbits, rats, and mice. Sometimes it eats other snakes. Many people have captured these snakes and sold them as pets. It is no longer allowed and laws need to be observed if this animal is to survive.

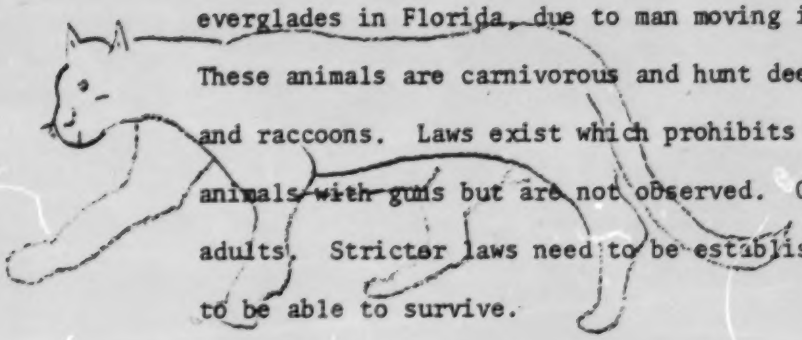
ROUND-TAILED MUSKRAT

This animal can live both in water and on the land. It is often called the Florida water rat, and lives in the marshes. Its home looks like a small haystack and sticks out of the marsh. They are built of twigs and leaves with two doors leading to the water. These animals eat roots and stems and crayfish. This animal is very important to the natural food chain and needs to be protected.

OKALOSSA DARTER

This slender little fish is mostly found in Okaloosa County, Florida. Adults are only about two inches long and lives in sand bottomed streams. Mining operations and dredging affect the habitat of this little fish. Water pollution is also having its affect on the survival of this fish.

FLORIDA PANTHER

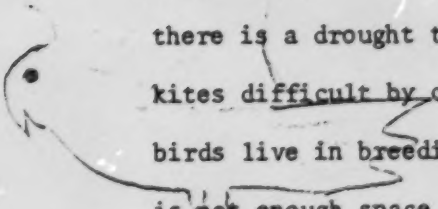


Once the panther roamed most of North America. Now it lives in the everglades in Florida, due to man moving in and pushing the panther out. These animals are carnivorous and hunt deer, wild hogs, skunks, rabbits, and raccoons. Laws exist which prohibits man from killing these animals with guns but are not observed. Only half of all cubs become adults. Stricter laws need to be established and observed for this animal to be able to survive.

BROWN PELICAN

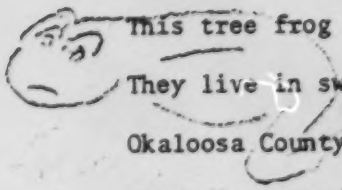
About 20,000 pelicans live in Florida. There are two dangers which face the pelican; DDT, and destruction of mangrove trees. The pelican eats fish with contains DDT and it makes the egg cases thinner. As the DDT count raises the shells become thinner and the young will die. The mangrove tree is their home and to destroy it is destroying them.

EVERGLADES KITE



The everglades kite is a bird with a very limited menu. It eats only the apple snail. When there is enough water there are enough snails, yet when there is a drought the snails become scarce. Man has made life for the kites difficult by cutting the water supply to the everglades. These birds live in breeding pairs which are extremely territorial. If there is not enough space for them they will not reproduce. Man needs to protect these rare and beautiful birds.

PINE BARRENS TREE FROG



This tree frog is only about two inches long and very rare in Florida. They live in swamps and bogs and have been found only in a small part of Okaloosa County. Not much is known about these frogs since they were only discovered in 1970.

47

BALD EAGLE

The bald eagle is our national emblem and stands for strength and courage. These birds only reproduce well in Alaska and Florida. Chemical pesticides, loss of nesting trees and hunting are its enemies which man contributes to. Man needs to protect these birds or they will only be found in books.

SANDHILL CRANE

The number of these animals is getting smaller due to man invading their natural breeding grounds and draining the praires. Cranes lay only two eggs and usually only one survives. The natural wetlands need to be protected and undisturbed for the survival of this animal.

AMERICAN CROCODILE

At one time these animals were found as far north as Daytona Beach. Now they are found only in the Everglades. This important animal helps other creatures survive. Efforts have been made to build the present population but has not been successful. Hunters kill and sell the animals hide. Laws exist to protect these animals yet many are still being killed. Areas need to be set aside for the continuation of this animal.

RED-COCKADED WOODPECKER

This bird has a patch which is red and about the size of a robin. A black and white ladder ladder decorate its back. This bird will find an old pine and make it its home. As many as ten birds will live in one tree. It can only live in old pines which are diseased. Man cuts down all the old pines for lumber. To protect this bird old, untouched forests will have to be saved or the bird will die off.

TREES

OBJECTIVE

After the lesson, the child will be able to list ways to conserve paper.

MATERIALS

Newspaper

LESSON

Introduction

Present data: 17 trees are required to make 1 ton of newsprint.

Activity

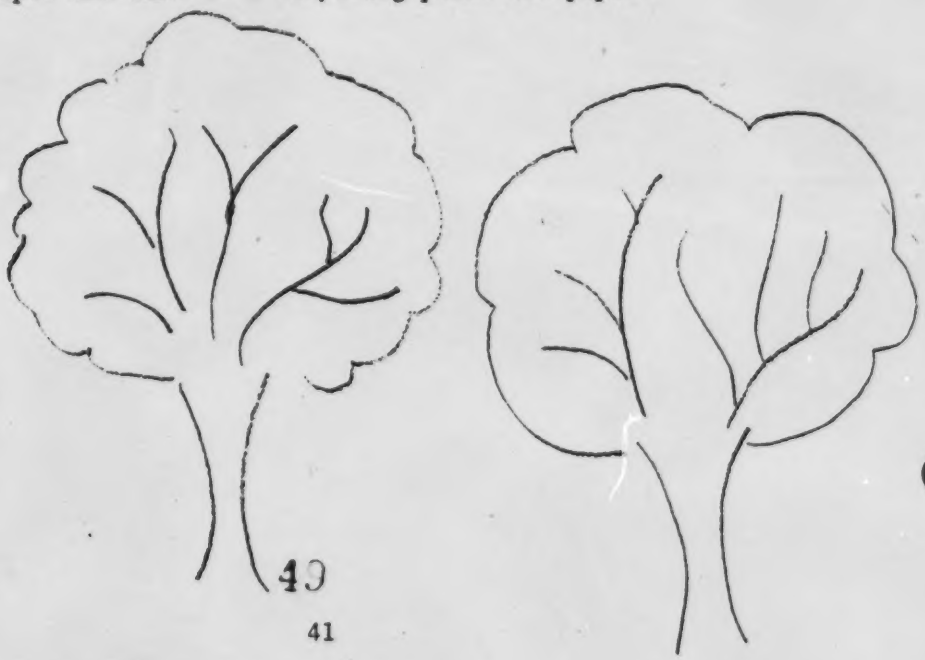
Students collect newspaper weekly in their homes and multiply by 52. This is what the average family discards in 1 year.

Discussion

Brainstorm different ways to conserve paper.

....A Little Bit More

Construct bins which would hold newspaper. Have children bring in all used paper and take to a recycling plant for paper.



NATURAL CONSERVATION

OBJECTIVE

After the experiment, the child will be able to list ways to conserve the natural resources of our land.

MATERIALS

Paste, scissors, cardboard, shellac, paint, screening, grass seed, earth and watering can.

LESSON

Introduction

Visit a barren waste land, then visit a park.

Activity

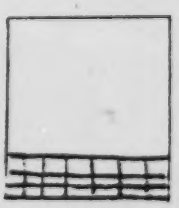
Make two boxes (8 x 12" and 6" deep). Fill boxes with soil shaping mountains and hills in the corners and sides leaving a valley in between. Plant grass seed in one and leave the other bare. At the end of each secure a piece of screening to one end. With cardboard make houses and trees for both. At the end of two weeks snip the grass back so the house will show. Water each box lightly and observe the runoff. Compare the amount of water and soil lost in each box.

Discussion

How does the natural elements of our environment help to protect?

.... A Little Bit More

Take a walk on a windy day observing how the wind moves earth, clouds, flags, and anything else the wind moves. Show how grass and bushes keep the soil in place.



CONSERVATION SCRAPBOOK

OBJECTIVE

The child will be able to construct a conservation scrapbook utilizing written reports, poems, cartoons, and drawings.

MATERIALS

Paper, pencil and art materials as needed.

LESSON

Introduction

Our natural resources are very valuable. Some of the ones we must treat wisely are: soil, wildlife, oil, water, forests and coastal regions.

Activity

Plan a section for each of the above. Written reports, poems, cartoons, drawings and photographs can be used.

Discussion

Center on children being able to elicit those natural resources which need to be conserved.

....A Little Bit More

Bind together to make a class book for others to enjoy and learn from.

WATER DRAINAGE STUDY

OBJECTIVE

After comparing various areas, the child will be able to report those areas where most damage is occuring.

MATERIALS

Geographic areas.

LESSON

Introduction

Locate an eroding area around the school site and observe.

Activity

Compare asphalted areas, grassy spots and land cleared for construction in the community.

Discussion

Which areas does the most damage occur?

Which areas does the water run off fastest?

What happens?

How can this be altered?

....A Little Bit More

Take pictures and make into a book for others to see.

RECYCLING

WHAT IS RECYCLING?

1. Empty fabric containers can be recycled or reused and made into planters, toys, containers, or whatevers.

2. Cans and other oddities can be made into op art, mobiles or other creative art objects.

3. Bottles can be decorated and used as vases, planters, or whatevers.

4. Children can first hand experience recycling by wearing older siblings clothes or playing with used toys.

5. Hold a flea market for all goods that are going to be discarded.

6. Have children brainstorm as many ways as possible to reuse discarded materials.

7. Keep a large reusable box in the classroom for the children to use as they wish.

8. Make a compost using left over food at lunch.

RECYCLING

OBJECTIVE

The child will be able to list various ways to reuse specific materials, and orally define the meaning of recycling.

MATERIALS

Chalk and board.

LESSON

Introduction

What if you never wore your clothes twice? What if you threw all your dirty clothes in a pile? What if you never washed your clothes?

Activity

Have the child draw a picture of his/her room under the conditions stated above. A short story could accompany the picture.

Discussion

Do we use our clothes over again? Why? Should we reuse other materials and things? Why?

....A Little Bit More

Present a visual presentation of the life cycle of a paper bag. Make a chart brainstorming ways to recycle goods.

MAKING PAPER

OBJECTIVE

Given materials and directions, the child will be able to make paper from materials and follow specific directions.

MATERIALS

White facial tissue, egg beater, bowl, cake pan, piece of screening and water.

LESSON

Introduction

Visit a card store or bring in samples of recycled paper. Compare the similarities and differences to that of first time paper. Chart the findings.

Activity

1. Place 30 pieces of tissue in a bowl.
2. Fill 1/2 full with warm water; soak one hour.
3. Beat till soupy - pulp.
4. Place screen into bottom of cake pan.
5. Pour pulp into pan, gently shake.
6. Lift screen out and let dry one hour.
7. Peel off recycled paper.

Discussion

Why is it helpful to recycle paper? Could big industries recycle paper as we did? Why?

....A Little Bit More

Have the children make several pieces of paper and construct a class book.

ARTISTIC GARBAGE

OBJECTIVE

After the lesson, the child will be able to list those things found in the average families garbage that can be used again.

MATERIALS

Plastic gloves, plastic bags, garbage.

LESSON

Introduction

Have the children bring in one days worth of garbage carefully wrapped.

Activities

1. Gloved children freely explore garbage and react to their findings.
2. Separate, sort, classify materials in as many different ways as possible.
3. Measure and weigh various materials.
4. Wasted waste - children find inappropriate waste and generate ways to reuse.
5. Wet garbage - compare the different materials found in liquids.
6. Hot garbage - dry garbage by burying in sand, hanging in open air, or freeze dry.
7. Growing garbage - seeds and other fruit and vegetable waste can be planted.
8. Artistic garbage - What can be done to beautify garbage?

DISCUSSION

Discuss different finds from different children.

....A Little Bit More

What else can be done with garbage?

- B A L A N C E

Interdependence

-

Values

-

INTERDEPENDENCE ACTIVITIES

1. Build an aquarium and terrarium - observe the interdependence of the living things. Chart and gather all observable changes; i.e. when taking something out of the constructed environment, adding something, changing conditions, or anything else that could be changed.

2. Set up a bee colony, or an ant farm - observe and discuss.

3. Interview elders for their opinions concerning the changes that have occured during their lives. How do they feel about such changes?

4. Develop an outdoor classroom; children would be included during the planning and execution of the state.

5. Plan an environmental bazaar/fair. Junk art, recycled art, environmental crafts and other natural objects could be made to sell. Use the money to clean up school grounds and plant trees and bushes.

6. Write to: National Wildlife Federation
   Backyard Wildlife
   1412 16th Street, N. W.
   Washington, D.C. 20036

   Start a backyard habitat.

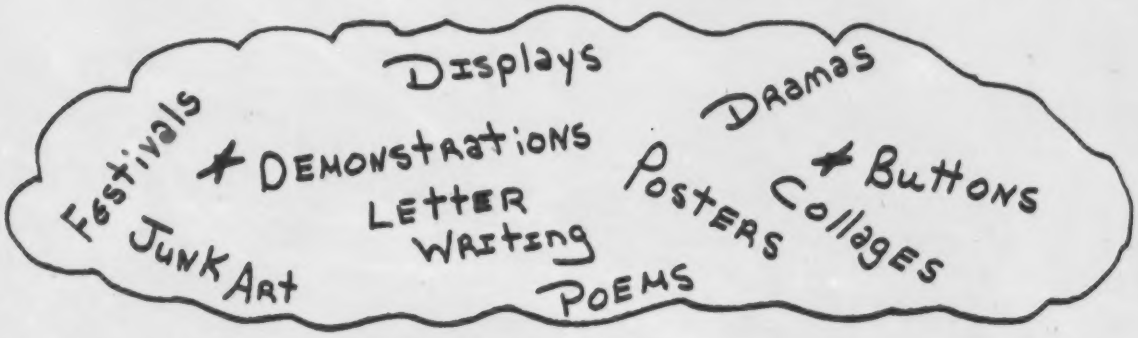
7. Pictures taken of things in the environment that children loves and/or hates. Pictures displayed and discussed in order of priorities.

VALUES EXERCISES

1. Pretend you are a doctor and your environment is your patient.
   a. What operations would you perform?
   b. Is there hope of saving the patient?
   c. Costs?

      Ways - Dramatizations, poetry, stories, oral presentations, tape recordings, or ....

2. Problem Solving - Campaign: Select an environmental problem facing your immediate area. Invent a campaign. List what you can do and do it!



3. Creative Writing - Take children to an area that is natural and free from evidences of man. Each child writes a poem, story, or draws a picture about anything in that area that is of interest.
4. Take children to an area that is built up by man. Have the children write something creative about that area. Compare and contrast with number three.
5. Have a puppet show about the interdependence of Plant vs. Man.

BUILDING A FOOD WEB

OBJECTIVE

After the lesson the child will be able to express in his/her own words the interrelationships and interdependence of a food web.

MATERIALS

String

LESSON

Introduction

Find a spiders web and carefully observe.

Activity

One child represents the sun and stands in front with arms raised giving off warmth and sunshine; two children represent trees; one child - airplant; one child - insect; one child - tree frog; one child - ribbon snake; one child - red hawk.

Returning to other tree - one child represents squirrel; one child - squirrel flea; one child - fox.

String is held by members participating in the web. Fan out like a web for the children to see the pattern.

Discussion

What would happen if trees were bull-dozed down? What would happen if sunlight were reduced?

....A Little Bit More

Children can make posters characterizing their role in the web.

ECOLOGY

OBJECTIVE

Given a set of drawings, the child will be able to identify those objects found in his/her environment correctly.

MATERIALS

Acquarium, terrarium and supplies.

LESSON

Introduction

Write the word ECOLOGY on the board. Ask for responses as to the meaning of the word.

Activity

Children go on a hunt and list things within the community that somehow are related to one another, i.e. plant - soil.

Discussion

Discuss the different materials a child needs in school (pencil, paper, desk, etc.) Discuss how one relates to the other. Discuss relation of things found in the environment. What would happen if something was taken away? Teacher interjects web formation or the children identify the concept through deductive thinking.

....A Little Bit More

Set up an aquarium, terrarium. Observe changes when different things are added or taken away.

THE VALUE OF NATURE

OBJECTIVE

The child will be able to write a poem or short story dealing with feelings aroused from nature and feelings aroused from a man-made environment.

MATERIALS

Paper and pencil.

LESSON

Introduction

Take the children to an area that is natural and free of evidences of man. Have a picnic or a relaxing time. Now take the children to an area that is completely built by man. Observe everything that is going on.

Activity

Have the children write a short story about the natural environment and one about the built environment. A poem could also be written. Compare the different stories.

Discussion

Which of the places felt better to sit down and have a lunch? Why?

....A Little Bit More

If you were going to build a house how would you go about dealing with the natural environment around it?

CINQUAIN POETRY

OBJECTIVE

After the instruction period, the child will be able to write a cinquain poem.

MATERIALS

Paper and pencil.

LESSON

Introduction

People write poems about the environment. The poems express their feelings; this kind of poem is called cinquain.

Line 1 - 1 word - Subject or Title

Line 2 - 2 words - Explains the Title

Line 3 - 3 words - Showing Action

Line 4 - 4 words - Completes line 3 or adds a further thought

Line 5 - 1 word - Explains the title

Activity

Work as a group constructing a poem, following individual poems.

Discussion

Compare different poems and their subjects.

....A Little Bit More

Do a painting and write a poem. Make a booklet of poems and pictures.

Nature

a garden of greenery

blooming, trailing, hanging

plants

INCHWORM, INCHWORM

OBJECTIVE

After the lesson, the child will be able to state ways in which marigolds are helpful.

MATERIALS

Marigolds, soil, water and containers.

LESSON

Introduction

Read the following poem:

Inchworm, Inchworm
Measuring the marigolds,
Seems to me you stop and see,
How beautiful they are.

Activity

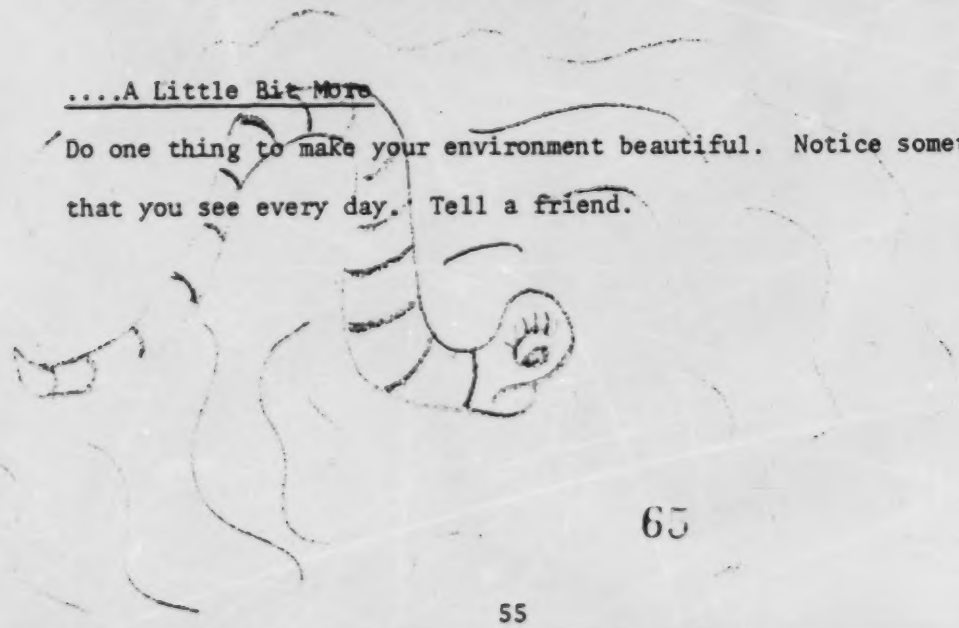
Plant a marigold garden. Make a marigold sponge painting and a weed print.

Discussion

Do you like the words of the poem? What do they mean to you? Are you too busy to see beauty? Do you know someone who is? How could you help them? How do marigolds help the environment?

....A Little Bit More

Do one thing to make your environment beautiful. Notice something beautiful that you see every day. Tell a friend.



FEELINGS

OBJECTIVE

The child will be able to list those things animals and people need to survive.

MATERIALS

Magazines.

LESSON

Introduction

What makes you happy? Find a picture of one thing. What makes you sad?

Activity

Act out or write about what makes a hungry animal happy, what makes a thristy animal happy.

Discussion

How do you feel when you see rain? fire? litter? a deal animal?

What things do animals need to live?

What do plants need to live?

How are you like other animals?

What do you need to live?

....A Little Bit More

Try to make someone happy. How did you do it? Tell the class.

Finish this line: For me happiness is_____.

THUMBPRINTS

OBJECTIVE

The child will be able to in his/her own words describe the meaning of interdependence among human beings.

MATERIALS

String, stamp pad and paper.

LESSON

Introduction

Find the five people you like the most to talk to. Give each a piece of string. Have each child do the same. Look at the pattern. If possible each child should have a different color string.

Activity

Use a stamp pad and paper. Find the people you depend on. Collect their thumbprints. List why you need them. Who depends on you? Collect their thumbprints on another piece of paper. List why they need you.

Discussion

Are some people on both lists? You and these people are interdependent. You need each other in some way. Look around and pick one thing - What does it depend on? What depends on it? Make a list or drawing.

....A Little Bit More

Make a thumbprint collage, frame and display.

PLANT SOCIETY

OBJECTIVE

After the lesson the child will be able to compare/contrast plant society with our society.

MATERIALS

Mother Nature

LESSON

Introduction

Take a hike and find an area that has relatively natural growth on it.

Activity

Children fully explore this area.

Discussion

Is there order to this society?

Are any members dependent upon one another?

Is our society dependent on one another?

Compare/constrast our society with plant society?

INTERACTING

OBJECTIVE

The child will be able to list those things he/she interacts with and how they affect him/her.

MATERIALS

"A Different Language"

LESSON

Introduction

Go outside, sit quietly and make a list of the things interacting.

Activity

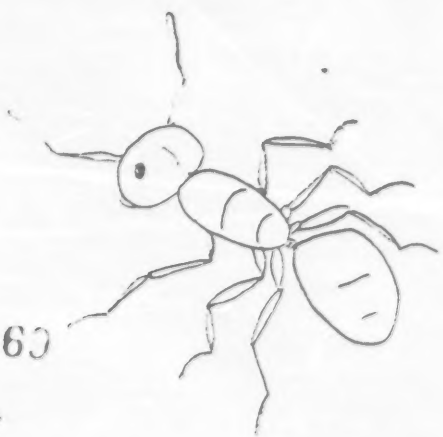
Collect an ants nest, put in a jar. Observe how they act and interact. Read "A Different Language". How do the animals in the story interact?

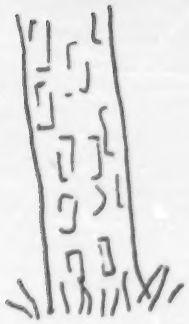
Discussion

You interact with many things. Make a list of the things you interact with in one hour. Discuss and compare with others in the class.

....A Little Bit More

Make a collage showing five ways you interact with your environment, frame and display.





WE NEED TREES

OBJECTIVE

The child will be able to list ways trees are important and those creatures who are dependent upon trees.

MATERIALS

Hand lens, ditto, trees and leaves.

LESSON

Introduction

On a hot day take the temperature under a large tree. Take the temperature in the direct sun. Compare the difference. Have a picnic under the tree and closely observe any animals living in or around the tree.

Activity

Examine a leaf carefully using a hand lens. Examine a piece of wood. Sand it, rub oil on it, examine the grain. Cut and paste the following ditto placing the appropriate animals in the tree.

Discussion

Did you see any animals living on the leaf?

Did you see any animals living on or in the wood?

What is our need for trees?

Do they help our environment in any way?

....A Little Bit More

Look around and find as many things made of wood and make a collage.

THE GIVING TREE

OBJECTIVE

After the lesson, the child will be able to identify reasons why trees are important. He/she will be able to state animals which interact directly with trees..

MATERIALS

The Giving Tree - Silverstein - various pictures of trees.

LESSON

Introduction

Children freely examine pictures of trees and forests expressing their feelings. Openly discuss trees, tree products, animals in the pictures which live in trees.

Activity

What if all the trees turned to stone?

Discussion

Children respond openly to question guided: animal outcomes; product outcomes; beauty. Could man live without trees and forests? Why? Who else needs trees?

....A Little Bit More

Write a poem about a tree and illustrate.

CHANGES, CHANGES AND MORE CHANGES

OBJECTIVE

Children will be able to distinguish between "good" change and "bad" change.

MATERIALS

Paper and pencil.

LESSON

Introduction

Two teams are established - a "good" team and a "bad" team.

Activity

Each team collects a list of good and bad changes.

Discussion

Each team prepares their changes and presents to class. Discussion should include all children. Descriptive words that children elicit should visabally be grouped together.

I.	II.	III.	IV.
What Changed	How It Changed	Result of Change	Something Else That Would Be Effected

Clouds ---------> Smoke ----------> Decay----------> Me/Animals

...A Little Bit More

Haiku poetry

II

Student Worksheets

Environmental Games

Environmental Art

Environment and Reading Activities

(A)

ENVIRONMENTAL ART

ENVIRONMENTAL ART

1. WEED PRINTS

   Weeds gathered and pressed with warm iron between wax paper. Frame and display.

2. FLOWER COLORS

   Children gather petals and place on white paper. Color is squished out with pressure and designs are made.

3. TEXTURE IN NATURE

   Children are given small squares of newsprint. Using chalk, charcoal and pencil they are to transfer texture by rubbing over natural object.

4. LEAF AND INK

   Children find materials that could be used as natural pens. Drawings are done with these natural tools and displayed with drawings.

5. LEAF PRINTS

   Leaf rubbings done with crayon.

6. CLOUD PICTURES

   Imagry drawings - using pastels on white paper. Children are to use imaginations and sketch what they saw. Hair spray will prevent smearing.

7. LEAF PAINTING

   Children collect different leaves - paint bottoms with tempera and arrange on paper. Color and texture will transfer.

ENVIRONMENTAL ART (Continued)

8. SPATTER PAINTED LEAVES

Leaves arranged on paper. A thin mixture of tempra brushed over screen.

9. MONO PRINTING

Using leaves.

10. NATURES WAY

Children gather leaves, twigs and other natural objects available. Construct mobile hanging from wood.

11. SANDSPUR DESIGNS

Using gloves sandspurs are collected on a nature walk. Glue to medium weight paper. Add other media to create picture.

12. MOSAIC SEEDS

Various color and shapes of seeds are collected. Design sketched on paper first then seeds attached.

13. PINE CONE CREATIONS

Pine cones are gathered and glued to natural objects to make animals.

14. PAINT A CAN

Small groups design ways to beautify garbage cans. (Zodiac signs)

15. WEAVING

Placemats, cushions, woven from various natural materials.

16. SPORE PRINTS

Collect mature mushrooms. Cover a sheet of white paper with mucilage or other slow drying glue. Cut the stem of the mushroom below the cap. Insert four toothpicks to form legs. Place the cap on paper and cover with bowl or jar. Let stand for one day. Remove jar and spray with fixative.

17. PLANT CARDS

Arrange weeds and flowers on white paper. Cover with clear contact paper to seal.

18. Create something that says something to you? Will it say the same to someone else?

B

ENVIRONMENTAL

Games and Activities

WILDLIFE GAMES AND ENVIRONMENTAL GAMES

1. ANIMAL WORD PICTURES

Children draw an animal using the letter or the animals name.

2. GOING CROSSWORD

One child writes the name of an animal on the blackboard. Another child chooses another animal name and works with the existing letters.

3. HIDE AN ANIMAL IN SYNTAX

Have the children find the names of animals in sentences. Then have them make up ones of their own.

a. "I've got termites," the home owner said.

b. Sometimes she may read eerie stories, but never late at night.

c. "Leo pardner, tie your horse here," the cowboy drawled.

d. The hero never let the praise go to his head.

e. "Ow, let go! the woman screamed as the purse snatcher grabbed her arm.

f. He sat down to dinner and ate ravenously.

g. "Condo-rent", the sign on the condominium building said.

h. "Be a very good student," his mother advised him.

i. "Is the cab early?" he asked.

j. Odd ogres turn up in fairy tales.

ANSWERS

got termites - Otter

read eerie - Deer

Leo pardner - Leopard

hero never - Heron

Ow, let - Owl

ravenously - Raven

Condo-rent - Condor

be a very - Beaver

cab early - Bear

Odd ogres - Dog

4. WILDLIFE IN HERALDERY

   Have the children design personal coat of arms, using plants and animals.

5. THE CRITTERCENSUS GAME

   Place 90 white beans and 10 red beans in a jar. This represents a population of a particular animal. A red bean represents a tagged animal; a white bean represents an untagged animal. At random a child selects 10 beans using the formula c = (sxt) r children find total.

   c = total number of beans

   tell the child there are 10 red ones

   s = size of sample (10)

   t = total of tagged animals

   r = number of tagged animals found in sample

   Compounding the samples, the estimate gets better

6. Have the children develop a wildlife time line. Starting at any date research important dates from RANGER RICKS NATIONAL WILDLIFE MAGAZINE, ENCYCLOPEDIAS, BOOKS. Writing, art work, research, public speaking can be incorporated throughout.

7. Children design wetland habitat badges.

8. Design various clean up and inspect games at Red Bug Lake Park or any park nearby.

9. Litter, Litter, Everywhere (Enclosed) - Help boy find trash can. Make a litter bag.

10. TRACK TICKETS

Children run and find three pieces of trash at end of P.E. class in place of running lap.

11. TRASH RACE

Class divided into teams. Teams gathering most trash wins.

12. LEAF SEARCH

Teams searching for fallen leaves.

13. NATURE CHALLENGE

Two teams "living" and "non-living". Team with most wins.

14. DOCTORING UP

Class divided in half. Each group doctors up their area. (Sticks in a row, placing flowers on wrong plants, unnatural arrangements). Each group visits other area and discovers changes. Team to fix all mistakes wins.

(c)

A B C

ENVIRONMENT

and

Reading

ENVIRONMENT & READING

1. MAKE IT GROW

   Enclosed

2. CLEAN THE BEACH

   Children construct beach from various materials. Activity cards are thrown over beach, pick up beach by responding to cards.

3. PANTOMINE NATURE

   Each child has time to choose and think about something he/she would like to act like. Anything in nature that is of interest, an act of nature perhaps. Write on a piece of paper and exchange. Teams try and guess.

4. TUNE IN TO YOUR WORLD

   Take class outdoors, child is to find first thing that is unpleasant to him/her. Examine object closely and try to find some beauty in it. Discuss, write, free expression to increase articulation process. Lead a discussion leading to the generalization of careful inspection.

5. WHAT DO THINGS SAY?

   Children are to go outside to find something natural or unatural. The objects found should say something without words. Group discussion examining all objects.

6. PUPPET SHOW

   Man vs. Mother Nature. Children write story and make puppets.

7. TREASURE HUNT

   Hunt for three shapes, sweet and sour taste, pleasant to look at, sad, pleasant and unpleasant smell and three textures. Children bring back and compare.

8. HUNTING FOR POLLUTANTS

Find three things spoiled by air, water, land and noise. How were each spoiled? Could they have been prevented?

9. LITTER SCAVENGER HUNT

2 Milk Cartons

3 Pencils

5 Pieces of Paper

3 Candy Wrappers

10. OBSERVATION BINGO

A. NATURE BINGO

Noise	Water	Air
Land	FREE	Noise
Air	Land	Water

A. Pictures Shown Area Covered

B. PICTURES DEPICTING

B. Statement Read Area Covered

11. NATURE MEMORY HUNT

Small groups are divided up. Each group has a chance to closely examine table prepared with 10-15 different items that could be found outside. Groups are given 15 minutes to find as many items that were seen. Discuss alternatives on memory.

12. TOUCH AND FEEL BOX

Items found outside the school are placed in large paper bags. Each child reaches in and touches something. Individuals or small groups go outside and try to find something that was felt.

13. ENVIRONMENTAL MESSAGES

Children prepare a series of short messages concerning the school environment and community. Messages read over loud speaker.

14. HAIKU POETRY

Originated by the Japanese consisting of three lines. The emphasis is syllabic not rhyme.

Line 1 - 5 syllables

Line 2 - 7 syllables

Line 3 - 5 syllables

15. CREATIVE WRITING

Children write about 2001 and 1976. Compare and contrast things to come.

16. CREATIVE POETRY

Cinquain

1 - Noun

2 - Adjective

3 - Verbs

4 - Metaphors

1 - Synonym

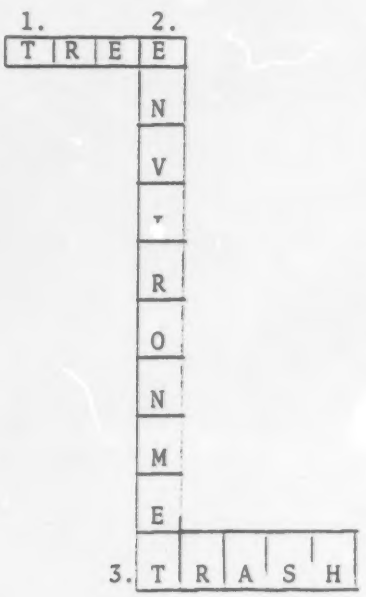
1. MAKE IT GPOW

Reinforcing, strengthening comprehension cf material as well as developing word building skills.

RIDDLES DESIGNED

Example:

1. I am what paper comes from.
2. I am a big word that describes everything around you.
3. I am what makes up litter.



PUZZLE

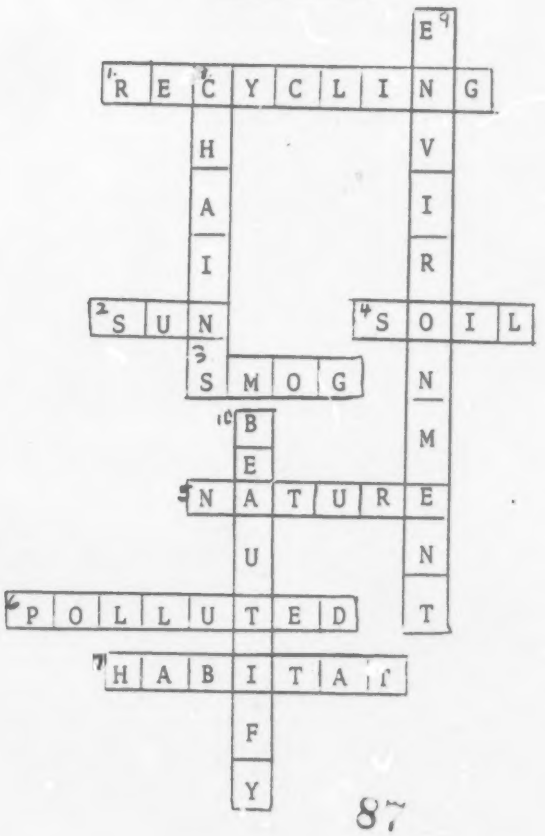
ACROSS

1. Using natural materials over again: _____
2. Energy that is the source of all life: _____
3. Polluted air: _____
4. Plants need this to grow _____
5. What we need to protect: _____
6. Dirty air or water: _____
7. Where animals live: _____

DOWN

6. Place where environment is preserved: National _____
8. Food follows pathways called food: _____
9. The natural world around us: _____
10. To make our environment look better: _____

PUZZLE KEY



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TAKE A PICTURE

OBJECTIVE

Child will be able to compile an environmental book utilizing different forms of expression.

READING SKILLS

Writing and self expression.

ACTIVITY

A. Children are free to explore nature books.

B. Children in small groups take pictures concerning environmental pollution and ways to clean up.

C. Books are put together and interchanged.

DISCUSSION

Ways to clean up and beautify.

ENVIRONMENTAL NEWS

OBJECTIVE

The child will be able to compile news for others to appreciate utilizing various forms of expression.

READING SKILLS

Writing mechanics, creativity and self expression.

ACTIVITY

A. Freely explore newspaper articles.

B. Student reporters sent to different areas of school to look for environmental problems.

C. Environmental poetry, pictures, stories and clean up ideas compiled for paper.

A DAY IN THE LIFE OF A _ _ _ _ _ _ _ _ _

OBJECTIVE

The child will be able to write a story or poem about nature.

READING SKILL

Writing and articulation.

LESSON

A. Children go outside and observe the living thing of their choice.

B. Children should write or record a short story about the living object they choose. Children should put themselves in its place. Likes, dislikes, friends, enemies, needs, wants, etc.

DISCUSSION

Child reads and other compare.

A class book is compiled.

NATURE SHOW AND TELL

OBJECTIVE

Children will be able to group objects and attach labels to groups.

READING SKILL

Grouping, selecting, manual dexterity.

ACTIVITY

A. Each child collects one thing from school grounds. If possible articles should be something child has not seen there before.

B. Objects are placed around the room. By each object materials available for children to freely respond.

C. Children freely respond.

DISCUSSION

How does a particular item feel, smell, and look? Why?

....A Little Bit More

Group items in various ways.

LISTENING AND SOUNDS - PLEASANT OR NOT

OBJECTIVE

After the lesson the child will be able to name specific sounds heard and attach to source.

READING SKILLS

Develops listening ability, auditory discrimination and auditory memory.

ACTIVITY

Small groups record all sounds in a fifteen minute period.

DISCUSSION

Start round robin where each child names a sound that he/she heard but may not repeat any sounds already mentioned.

....A Little Bit More

Children draw pictures of sounds they heard. Were the sounds pleasant? Why? Did you enjoy them? How?

VISUALIZING SOUNDS

OBJECTIVE

The child will be able to recreate a particular sound heard on paper.

READING SKILL

Develops auditory memory, hand-eye coordination.

ACTIVITY

Take the children on nature walks, have them listen carefully. In a shady spot children are to draw a picture of the sounds. Children are encouraged to use their imaginations. They are not to draw the things that make the sounds. They are to draw the sounds.

DISCUSSION

What are your sounds? Where do they come from? Are they unpleasant?

....A Little Bit More

Haiku poetry centered around another form of expression.

INVISIBLE NATURE

OBJECTIVE

The child will be able to relate verbally or pictorially what he/she imagines.

READING SKILL

Imaginative processes.

ACTIVITY

Child goes outside and draws, writes, or tapes something that is invisible.

DISCUSSION

How would the invisible things be affected by water, air, noise, and soil pollution.

....A Little Bit More

Make a display of the pictures.

III

RESOURCES

- Book
- Films
- Materials

TEACHER RESOURCES

Nature books that stress conservation:

1. THE CURIOUS NATURALIST - 10 issues - $2.00

   Mass. Audubon Society
   South Great Road
   Lincoln, Massachusetts 01773

2. RANGER RICK'S NATURE MAGAZINE - 10 issues - $10.00

   National Wildlife Federation
   1412 16th Street, N. W.
   Washington, D. C. 20036

3. POND LIFE

   Published by Garrard Publishing Company

4. BIRDS

   A Golden Nature Guide
   Golden Press

5. LITTER PREVENTION: A FIRST STEP TO IMPROVING THE ENVIRONMENT (16¢)

   Keep America Beautiful, Inc.
   99 Park Avenue
   New York, New York 10016

6. MCDONALDS - ECOLOGY ACTION PACK

   Office of Public Affairs
   U. S. Environmental Protection Agency
   Washington, D. C. 20460

7. A STORY OF AIR POLLUTION AND CARS

   General Motors Corp.
   Detroit, Michigan 48202

8. ECOSYSTEMS TEACHING PICTURES

   David C. Cook Publishing Company
   Elgin, Illinois

9. TREES - THE ART OF SEEING SERIES

   ACI Films, Inc.
   35 West 45th Street
   New York, New York 10036

FILMS

The following films are available from the Florida Department of Education, Bureau of Environmental Education, Miles Johnson Building, Tallahassee, Florida 32304.

1. ALLIGATOR - 14 Minutes

   It relates people to habitat destruction, pollution, protection of alligators, and maintaining the Everglades Environment.

2. PESTICIDES

   Public health services presents and overviews pesticides and health. Descriptions, use, care, and health hazards are introduced.

3. BEYOND THE SUBURBS - 15 Minutes

   Pertaining to what the forest means to the city.

4. HOW TREES HELP US - 9 Minutes

   Tells how trees grow and why they are valuable throughout their lives.

5. THE EXTERNAL FOREST - 20 Minutes

   Tracing the relationship between man and his environment, this film begins with our bountiful heritage and ends with man realizing he can no longer take without returning.

6. THE SOUTH'S THIRD FOREST - 15 Minutes

   This film is about the much needed management of forests.

7. TIME TO BEGIN - 29 Minutes

   This film strikes out in several directions at elements which threaten to destory natural beauty.

8. YOURS IS THE LAND - 20 Minutes

   Presents conservation of earth's life support system.

FILMS (Continued)

9. ST. VINCENTS - THE ISLAND - THE DREAM - THE MAN - 14 Minutes

   A film about the National Wildlife refuge off the North West Coast of Florida.

10. JOHN PENNEKAME CORAL REEF STATE PARK - 21 Minutes

    Underwater excursion through reef formations.

11. OUR THREATENED PARADISE - 28 Minutes

    Discussion of Florida's environmental problems and their solutions.

12. PATTERNS OF THE WILD - 28 Minutes

    Seeing through the eyes of a wild fox and how man fits into the food web.

13. GREEN CITY - [illegible] Minutes

    Civic action preserves green and open spaces as cities grow. This is a case study.

IV. Units

Ecology

Tree Conservation

UNIT - ECOLOGY

RATIONALE

The purpose of this unit is to make the children aware of their environment. In our ever growing population, children need to be exposed to the problems of the world around them. Areas dealt with are: pollution, conservation, and recycling.

CONCEPTS

A. Ways in which man alters the environment.

B. Elements of pollution: water, air, land and noise.

C. Conservation as a means of protecting our natural resources.

D. Recycling as a means of helping our resources and environment.

E. Different ways in which people and children can help with the problems of our world.

OBJECTIVES

1. After a Tanck lesson (instructional strategy), the child will be able to pick out those pictures which are pollution from those pictures that are not. The child will be able to offer explanation concerning these pictures.
2. After the unit, the child will be able to name the elements in the environment that are polluted, air, land, water and noise.
3. After the unit, the child will be able to state in own words what pollution, conservation, and recycling mean.
4. As a result of the unit, the child will be able to brainstorm ways to help our environment and make a poster.
5. On an outdoor exploration the child will be able to find evidences of man and chart them accordingly.

6. Given materials and guidance, the child will be able to: make paper, construct an air screen, and set up water evaluater.
7. After the films, the child will be able to list ways to conserve and recycle.
8. During the unit, the child will be able to do the things that were listed on their clean up chart.

PART I. INTRODUCTION AND QUESTIONING

A. Tanck Lesson

1. Pictures of pollution and non-pollution are displayed, the child listens as each is explained. Instructor goes back over as children point out pollution and not pollution. Child offers explanation.

B. Types of Pollution

Air, land, water and noise.

1. Child comes up with these after Tanck lesson.

C. Glitter Room

1. Children brainstorm ways of helping keep the room free from pollution. Chart and keep in view.

D. Environmental Villian Pictures

1. On manila paper, the child draws and colors an environmental villian of their choice.

PART II - MAN'S CARELESSNESS

A. Hunting For Signs of Man

1. Each child receives chart (attached), and finds three in each area.

UNIT - ECOLOGY (Continued)

PART II - MAN'S CARELESSNESS (Continued)

B. Attitude Chart

1. Small group work brainstorming ways to help clean up the environment.

C. Make New Slogans for Posters

PART III - EXPERIMENTS

A. Vaseline on Cardboard

1. Vaseline smeared on cardboard and set outside for dust and dirt to collect.

B. Water Pan

1. A pan of water set out for things to collect.

C. Tape Sounds

1. Sounds are taped from outside and inside. Listen and discuss pertaining to natural/man-made, loud/soft, necessary/un-necessary.

D. Space Walk

1. With all the pollution in the world, be an ant and take a walk. Take a walk on 30 foot stilts and be a 100 foot giant.

E. Fish, Bird, Etc.

1. Be a fish living in a polluted lake, dramatize.
Be a bird, etc.

PART IV - CONSERVATION

A. Films

B. List Ways of Conserving

C. Follow Through with Dramatizations from Part III

D. Draw and Write About the Ant Walk, Etc.

UNIT - ECOLOGY (Continued)

PART V - RECYCLING

A. Films

B. List Ways of Recycling

C. Dramatizations Continued

D. Check on Experiments Set Up

PART IV - EXPERIMENTS

A. Paper Experiment (Small Groups)

MATERIALS

White facial tissues
Egg Beater
Bowl
Cake Pan, 13" x 9"
Piece of Screen
Water

1. Put 30 pieces of tissue in bowl.
2. Fill 1/2 full of warm water; soak 1 hour.
3. Beat till soupy - pulp
4. Put screen into pan.
5. Pour pulp into pan; shake gently.
6. Lift screen out of pan.
7. Let dry for one day.
8. When dry lift off screen.
9. Recycled paper.

PART VII - RECYCLING

A. Bottle Film

B. Make or Decorate Bottles Brought from Home

C. Brainstorm ways to reuse a Big Mac container, milk container, etc.

UNIT - ECOLOGY (Continued)

PART VIII - EVALUATION

A. Test; Assessment of Unit

B. Discussion Pertaining to Results of Experiments

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WALTER THE WATER WASTER

Always leaves the faucet
gushing.
Wish he'd turn it off
while brushing.

BONNIE THE BULB BURNER

Leaves lights on when
no one's there
Wish she'd show a little
care

PAT THE PAPER PERIL

It does take years to
grow a tree
Wish she'd use paper
carefully.

GUS THE GAS GUZZLER

Always want to go
by car.
Wish he'd walk when
it's not far.

OUR FRIENDS THE TREES

Be friends with the trees
for a very good reason.
Because it's plants and trees
that keep us breathing.

LITTER IS POLLUTION TOO

Instead of dropping
that stuff down,
Please don't litter;
save our town.

LOVE OUR WATER

If we don't keep our
water clean ...

That fresh pure sight
soon won't be seen.

DEBBIE THE DUMPING DUNCE

Dumps bottles and
aluminum can,
Wish she would make
recycling plans.

SAVE A TREE

You can help to save
our trees
Recycling papers is
a breeze.

THINK BIGGER

A person's ambition
must be mighty small,
To write or draw
on a public wall.

MATERIALS

BOOKS

Let's Go To Stop Pollution - Michael Chester

Ecology and Pollution/Air - Martin J. Gutnik

Ecology and Pollution/Land - Martin J. Gutnik

Ecology and Pollution/Water - Martin J. Gutnik

The Water We Drink - Enid Bloome

The Air We Breathe - Enid Bloome

Where Does The Garbage Go? - Paul Showers

Any other available books

FILMS

Ecology of the Forest

Ecology of a Pond

Ecology of Your Land

You and Recycling - SVE

The Magician

Kiwi and the Bottle

Trash Treasure Hunt

Water All Around Us

CONSERVATION FOR TODAYS AMERICA

Urban	Wildlife
Forest	Land
Water	Soil
Mineral	

ECOLOGY

Name_____

I. Write your answers on the blanks

A. List the areas of pollution we have been studying.

1._____

2._____

3._____

4._____

B. List one (1) way to conserve each of the above.

1._____

2._____

3._____

4._____

II. Underline the right answer

C. Recycle means: 1) throw away
2) make use of again
3) keep
4) leave alone

D. Ecology means: 1) study of our environment
2) study of clouds
3) study of rocks
4) study of weather

WORD SEARCH

F	P	S	B	E	C	O	L	O	G	Y	U
O	G	C	O	N	S	E	R	E	A	K	V
W	A	R	T	V	J	A	K	B	Z	Y	Q
A	H	I	L	I	T	T	E	R	X	P	L
S	A	V	E	R	I	U	L	W	A	J	T
T	N	J	P	O	L	L	U	T	I	O	N
E	V	N	U	N	O	M	G	Z	R	K	A
M	N	L	Y	M	T	S	O	L	A	E	E
O	W	A	T	E	R	R	M	S	H	S	L
P	C	N	X	N	O	I	S	E	M	U	C
D	Q	D	E	T	R	A	S	H	I	B	H
F	G	E	D	N	C	Q	G	R	B	A	F

ECOLOGY
ENVIRONMENT
WATER
LAND
AIR

NOISE
POLLUTION
TRASH
LITTER
SMOG

CONSERVE
CLEAN
WASTE
ABUSE
SAVE

Messy	Acts of work	Noise
Litter/Trash	Construction	Voice/Pla

SOCIAL ISSUE/VALUE

TREE CONSERVATION

ISSUE
OBJECTIVE 1

After completing the lesson on trees, the students will be able to orally state the need for forest conservation in community and country, and explain why the need is important today.

NEED

Conserve beauty, provides homes for animals, helps conserve water, and helps to purify the air.

VALUE
OBJECTIVE 2

Upon completion of the study on trees, the students will orally express their views regarding trees and their protection (conservation) of.

MOTIVATION

Field trip to tree farm on wood processing plant.

ENVIRONMENT

Around the room posters, pictures and books will be placed for the children inspection.

DAY 1

A. Ask question - "What do you think are some of the reasons our forests are becoming smaller and fewer in number?"
B. List children's responses.
C. Introduce words conserve and preserve as two new chart words.
D. Free to look at materials.

DAY 2

A. Read story the Dead Tree; read poem Woodman, Spare That Tree; and view film, Ecology of Forests.

B. Discuss above.

C. Collection - Introduce to students the procedure for finding information. Examples children could use:

1. books
2. television
3. newspapers
4. tree farm
5. environmentalist
6. State Dept. of Commerce

Children are to find data concerning:

1. economic importance of trees
2. products from trees
3. location of forests in U.S.A.

Break into three groups to work on three areas. Each group work with meaning of conserve and preserve.

DAY 3

On large map in classroom, work on placing pins to indicate forests. Color coded to indicate size.

Materials available for children to use in connection with data collecting.

DAY 4

Each group present what information was found. Compile information - tie in with responses from day 1.

DAY 5

A. Show pictures:

1. tree housing animals
2. home being built
3. clearing land for construction
4. beautiful nature (trees)
5. barron, stripped land
6. forest fire

B. Have children freely respond to pictures

C. Guided questions -

1. How does (this - individual) picture make you feel?
2. What are some other ways we could build a house without using lumber?
3. What could be done to prevent this?
4. Would you like to live there? Why? Why not?
5. Are trees of any value? Why?

D. List responses and discuss.

E. If trees are determined important ----

Question - How can we as individuals or group, help to conserve and preserve trees?

F. List responses

G. Final Activity -- Plant tree in school yard.

EVALUATION

1. Were the children able to verbally state the need for forest conservation?
2. Were they able to explain why the need is important?
3. Were the children able to clarify their attitudes and values toward trees and the conservation of?
4. Were the children able to collect the data requested?

TREE CONSERVATION (Continued)

SITUATION

A public park was under proposal to be closed in order that a playground for the school next door could be extended. All the trees would have to be taken out so the play equipment could be put in.

If you were on the voting committee for this situation how would you vote? Why?

Possible alternatives - listed.

ALTERNATIVES

If you were on the committee board how would you vote? (Let children choose alternatives freely.)

CONSEQUENCES

What would happen if this one particular solution was done by all?

Why do you think this would happen?

PRIZING AFFIRMING

Could you act this out? By the child acting out a particular consequence one could see that the child believes what he/she is thinking and can prize his/her values. He/she is sharing with his peers the choice he thinks is the best and why.

ACTING OUT CHOICES

Each child could think up ways to help in the preservation of trees and the conservation of trees and forests.

REPEATING

He/she should feel the same about his/her value whether it should be at home, school or community.

TREE CONSERVATION (Continued)

MATERIALS

Tree and planting materials

BOOKS

A Hike in the Forest

Pollution: The Balance of Nature
O. Jones

The World You Inherit
J. Navarra

The Dead Tree
A. Tresselt

Tree and How We Use Them
T. Pine/J. Levine

Ecology, How and Why Series
M. S. Grossman

The Life of the Forest
J. McCormick

Woodman, Spare That Tree (Poem)
G. P. Morris

FILMS

The Tree - Introduction to Ecology
Churchill Films

Ecology of a Forest - Ecological Series
Imperial Film Corp.

RELATED MATERIALS

Booklet - Tree - The Environmental Ed. Project

Posters - American Forest Institute

Booklet - The Environmental Ed. Project -
The Garden Club of America

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A Few Swell Teaching Ideas, Lyn Martin.

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